



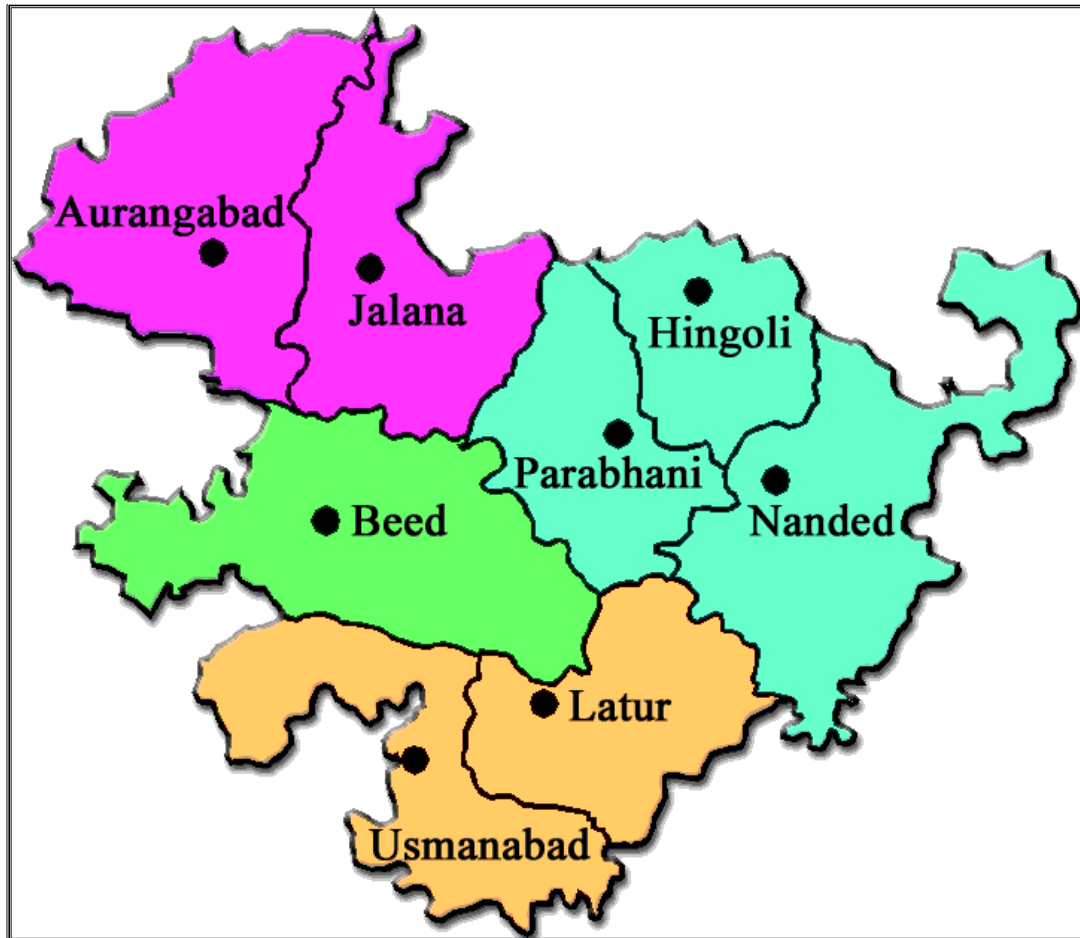
**GOVERNMENT OF MAHARASHTRA  
WATER RESOURCES DEPARTMENT**



Upper Penganga Project, Dist. Yeotmal

**Annual Consolidated Health Status  
Report of Identified Large Dams  
(Class-I,II) in Marathwada Region for  
Year 2019-20**

**Superintending Engineer  
Dam Safety Organisation,  
CDO Building, Dindori Road,  
Nashik-4**




## MARATHWADA REGION

## PREVENTION IS BETTER THAN CURE

“Regular Inspections along with safe maintenance and operation of dams and spillways thereof, assumes vital importance to avoid probable danger to life and property on the downstream.”



<b>Superintending Engineer</b> <b>Dam Safety Organisation</b> Dindori Road, Nashik-422004. <b>Phone (Off.): 0253 – 2530030.</b> <b>Fax: 0253 – 2530030.</b> <b>E-mail: <a href="mailto:se.damsafety@gmail.com">se.damsafety@gmail.com</a></b> <b>Website: <a href="http://www.mahadso.org">www.mahadso.org</a></b>	 <b>महाराष्ट्र शासन</b> <b>जलसंपदा विभाग</b> <b>GOVERNMENT OF MAHARASHTRA</b> <b>WATER RESOURCES</b> <b>DEPARTMENT</b>	<b>अधीक्षक अभियंता,</b> <b>धरण सुरक्षितता संघटना,</b> दिंडोरी मार्ग, नाशिक - ४२२ ००४. दूरध्वनी (ऑ.): ०२५३ - २५३००३० फॅक्स : ०२५३ - २५३००३०. ई-मेल : <a href="mailto:se.damsafety@gmail.com">se.damsafety@gmail.com</a> वेबसाईट : <a href="http://www.mahadso.org">www.mahadso.org</a>
जा.क्र./धसुविक्र.२/ मराठवाडा/धरण स्थिती अहवाल २०१९-२० / १८६ / २०२० दिनांक : २९/०५/२०२०		

प्रति,

- १) मुख्य अभियंता व मुख्य प्रशासक, लाभक्षेत्र विकास प्राधिकरण, सिंचन भवन,  
गारखेडा परिसर, औरंगाबाद - ४३१००५
- २) मुख्य अभियंता, जलसंपदा विभाग, सिंचन भवन, आकाशवाणी जवळ,  
जालना रोड, औरंगाबाद - ४३१००५
- ३) अप्पर आयुक्त तथा मुख्य अभियंता, (स्थानिक स्तर),  
मृद व जलसंधारण प्रादेशिक क्षेत्र,  
बंगला नं. १२, जेल रोड, येरवडा, गोल्फक्लब हाऊस समोर, पुणे - ४११०६३

**विषय :-** मराठवाडा विभागातील पुर्ण झालेल्या मोठ्या धरणांचा पावसाळा पूर्व - उत्तर २०१९  
धरण स्थिती अहवाल..

**संदर्भ :-** महाराष्ट्र शासनाचे इंग्रजी पत्र क्र .पा.वि.१०७७ / २४०२/ १८६७/२ दिनांक १९.१.८२

संदर्भित शासन पत्रानुसार आपले अधिनस्त अधीक्षक अभियंता व कार्यकारी अभियंत्याकडून हया कार्यालयात प्राप्त झालेल्या मराठवाडा विभागातील पावसाळा पूर्व व उत्तर २०१९ धरण निरीक्षण अहवालांची छाननी करुन तसेच धरण सुरक्षितता संघटनेकडुन करण्यात आलेल्या Test Inspection नुसार धरण स्थिती अहवाल तयार करण्यात आलेला आहे.


धरण स्थिती अहवालावरुन असे निदर्शनास येते की ; मराठवाडा विभागातील वर्ग-१ व वर्ग-२ च्या धरणांमध्ये संवर्ग-१ च्या त्रुटी आढळून आल्या नाहीत. मात्र वर्ग -१ मधील ३७ पैकी ५ धरणांमध्ये (१३.५१ %) आणि वर्ग - २ मधील २३७ पैकी २७ धरणांमध्ये (११.३९ %) संवर्ग-२ च्या त्रुटी आढळून आल्या आहेत.

धरण सुरक्षिततेसंबंधी क्षेत्रिय स्तरावर उदासिनता दिसुन येते. धरणस्थिती अहवाल २०१८-१९ मध्ये वर्ग-२ च्या त्रुटी आढळुन आलेल्या धरणांचे बाबतीत Action Taken Report १८ मे-२०२० अखेर पर्यंत प्राप्त झालेत. प्राप्त अहवालांची तपासणी केल्यावर दिसुन येते की, HSR २०१८-१९ मध्ये २० प्रकल्पांवर ७० वर्ग - २ च्या त्रुटी आढळुन आल्या होत्या. त्यापैकी १८ प्रकल्पांवरील वर्ग-२ च्या काही त्रुटींबाबत कार्यवाही प्रस्तावित केल्याचे दिसुन येते. वरीलप्रमाणे वर्ग - २ च्या त्रुटी निराकरणात दुर्लक्ष झाल्याने महाराष्ट्राला तिवरे धरण फुटीस सामोरे जावे लागले. भविष्यात याची पुनरावृत्ती होवु नये म्हणुन धरण सुरक्षिततेसाठी Dam Safety - Action Taken Reports बाबत प्रादेशिक कार्यालयात वेळोवेळी होणा-या होणा-या मासिक बैठकीत हा विषय अंतर्भुत करुन निदान त्रैमासिक आढावा घेतला जावा ही विनंती. दोष व त्रुटी बद्दल उचित कार्यवाही करुन सदर त्रुटींचे भौतिक निवारण करण्यात यावे आणि अनुपालन / पुर्तता अहवाल या कार्यालयास त्वरीत



पाठविण्याबाबत आपल्या अधिनस्त असलेल्या संबंधित अधीक्षक अभियंता यांना आपले स्तरावरून सुचना देणेची विनंती आहे.

धरण निरीक्षण अहवाल क्षेत्रीय अधिका-यांकडून प्राप्त होण्यास सर्वसाधारणपणे दिरंगाई होते. त्यामुळे या संघटनेस धरण स्थिती अहवाल तयार करण्यात विलंब लागतो. तरी कृपया यापुढे धरणाचे निरीक्षण अहवाल विहीत नमुन्यात व विहीत कालावधीत या संघटनेस पाठविण्याविषयी क्षेत्रीय अधिका-यांना आपले स्तरावर सुचना निर्गमित व्हाव्यात ही विनंती. धरण स्थिती अहवाल सर्व संबंधित मंडळ व विभागीय कार्यालयांना ई-मेल द्वारे पाठविण्यात येत आहे.

  
(य. का. भदाणे) 21/05/2020  
अधीक्षक अभियंता,

सहपत्र : धरण स्थिती अहवालाची प्रत.

धरण सुरक्षितता संघटना, नाशिक - ०४

प्रत -

१. मा. सचिव (जसंख्य व लाक्षेवि), जलसंपदा विभाग, मंत्रालय, मुंबई-३२ यांना अहवालासह माहितीस्तव सविनय सादर.
२. मा. कार्यकारी संचालक, गोदावरी मराठवाडा विकास महामंडळ, सिंचन भवन, जालना रोड, आकाशवाणी केंद्राच्या बाजूला, औरंगाबाद-४३१००५
३. मा. महासंचालक, संकल्पन, प्रशिक्षण, जलविज्ञान, संशोधन व सुरक्षितता, मेरी, नासिक यांना अहवालासह माहितीस्तव सविनय सादर.
४. मा. मुख्य अभियंता, (यांत्रिकी), त्रंबक रोड, नाशिक.-४२२००४
५. मा. मुख्य अभियंता, नियोजन व जलविज्ञान, नाशिक यांना अहवालासह माहितीकरीता सविनय सादर.
६. मा. आयुक्त, महानगरपालिका, औरंगाबाद.
७. मुख्य कार्यकारी अधिकारी, नगरपरिषद जालना.
८. मुख्य कार्यकारी अधिकारी, नगरपरिषद उदगीर, जि. लातूर.  
यांना अहवालासह माहितीसाठी सविनय सादर.

सहपत्र- प्रत्येकी अहवालाची एक प्रत.

प्रत -

१. अधीक्षक अभियंता व प्रशासक, लाभक्षेत्र विकास प्राधिकरण, गारखेडा परिसर, औरंगाबाद.- ४३१००५
२. अधीक्षक अभियंता व प्रशासक, लाभक्षेत्र विकास प्राधिकरण, जायकवाडी वसाहत, नगर रोड, बीड.
३. अधीक्षक अभियंता, बीड पाटबंधारे प्रकल्प मंडळ, सिंचन भवन, अंबेजोगाई रोड, परळी वैजनाथ, जि. बीड.
४. अधीक्षक अभियंता, औरंगाबाद पाटबंधारे मंडळ, जुन्या हायकोर्टाच्या पाठीमागे, अदालत रोड, स्नेहनगर, औरंगाबाद -४३१००५.
५. अधीक्षक अभियंता, नांदेड पाटबंधारे मंडळ, सिंचन भवन, नांदेड -४३१६०५.
६. अधीक्षक अभियंता, उस्मानाबाद पाटबंधारे मंडळ, पाटबंधारे वसाहत, उस्मानाबाद.
७. अधीक्षक अभियंता, जायकवाडी प्रकल्प मंडळ, औरंगाबाद.
८. प्रादेशिक जलसंधारण अधिकारी, मृद व जलसंधारण विभाग, पत्रपेटी क्र. ५१५, औरंगाबाद.
९. अधीक्षक अभियंता, यांत्रिकी मंडळ, (द्वारे) नवीन प्रशासकीय इमारत, पुणे ४११००९.  
यांचे माहितीसाठी व पुढील योग्य त्या कार्यवाहीसाठी अहवालासह सस्नेह अग्रेषित.
१०. अधीक्षक अभियंता, (धरण), मध्यवर्ती संकल्पचित्र संघटना, दिंडोरी रोड, नाशिक ४२२००४.  
यांचे माहितीसाठी सस्नेह अग्रेषित.

सहपत्र :- प्रत्येकी अहवालाची एक प्रत.

यांना माहितीसाठी व पुढील योग्य त्या कार्यवाहीसाठी अहवालासह सस्नेह अग्रेषित.

२/- कृपया वरील अहवालाची प्रत मिळाल्याची पोहच या कार्यालयास पाठवावी ही विनंती.

प्रत -

१. कार्यकारी अभियंता, जायकवाडी पाटबंधारे विभाग, नाथनगर (उत्तर) पैठण, जि. औरंगाबाद.
२. कार्यकारी अभियंता, औरंगाबाद पाटबंधारे विभाग, औरंगाबाद .
३. कार्यकारी अभियंता, लातूर पाटबंधारे विभाग क्र.२ लातूर
४. कार्यकारी अभियंता, जायकवाडी पाटबंधारे विभाग क्र.३, बीड
५. कार्यकारी अभियंता, माजलगांव पाटबंधारे विभाग, परळी वैजनाथ, जि. बीड.
६. कार्यकारी अभियंता, उस्मानाबाद पाटबंधारे विभाग-१, उस्मानाबाद
७. कार्यकारी अभियंता, उस्मानाबाद पाटबंधारे विभाग-२, उमरगा, जि. उस्मानाबाद
८. कार्यकारी अभियंता, बीड लघु पाटबंधारे विभाग, अंबाजोगाई,, जि. बीड.
९. कार्यकारी अभियंता, लघु पाटबंधारे विभाग, लातूर
१०. कार्यकारी अभियंता, मध्यम प्रकल्प विभाग, लातूर
११. कार्यकारी अभियंता, लघु पाटबंधारे विभाग क्र. १, औरंगाबाद..
१२. कार्यकारी अभियंता, उर्ध्व पेनगंगा प्रकल्प विभाग क्र. १, नांदेड
१३. कार्यकारी अभियंता, नांदेड पाटबंधारे विभाग (उत्तर), नांदेड .
१४. कार्यकारी अभियंता, नांदेड पाटबंधारे विभाग (दक्षिण), नांदेड .
१५. कार्यकारी अभियंता, नांदेड मध्यम प्रकल्प विभाग, नांदेड .
१६. कार्यकारी अभियंता, लघु पाटबंधारे विभाग, नांदेड
१७. कार्यकारी अभियंता, पूर्णा पाटबंधारे विभाग, बसमतनगर, जि. हिंगोली
१८. कार्यकारी अभियंता, जायकवाडी पाटबंधारे विभाग क्र.२ परभणी
१९. जिल्हा जलसंधारण अधिकारी, मृद व जलसंधारण विभाग, नांदेड
२०. कार्यकारी अभियंता, जालना पाटबंधारे विभाग, जालना
२१. कार्यकारी अभियंता, लातूर पाटबंधारे विभाग क्र.१ लातूर
२२. कार्यकारी अभियंता, नांदूर मध्यमेश्वर पाटबंधारे विभाग, वैजापूर, जि. औरंगाबाद
२३. कार्यकारी अभियंता, बीड पाटबंधारे विभाग, बीड
२४. कार्यकारी अभियंता, लेंडी प्रकल्प विभाग, देगलूर जि. लातूर
२५. कार्यकारी अभियंता, जालना लघु पाटबंधारे विभाग, जालना
२६. कार्यकारी अभियंता, पाणी पुरवठा विभाग, महानगरपालिका औरंगाबाद .
२७. कार्यकारी अभियंता, पाणी पुरवठा विभाग, नगर परिषद, जालना.
२८. कार्यकारी अभियंता, पाणी पुरवठा विभाग, नगर परिषद, उदगीर.

दोष व त्रुटी बद्दल त्वरीत कार्यवाही करून अनुपालन/पुर्तता अहवाल या कार्यालयास त्वरीत पाठवावा ही विनंती.

२/- सदर अहवालाची प्रत मंडळ कार्यालयाकडून प्राप्त करून घ्यावी.

प्रत - कार्यकारी अभियंता, धरण सुरक्षा विभाग क्र. १/२, कालवा सुरक्षा विभाग, दिंडोरी रोड, नाशिक ४  
प्रत - संशोधन अधिकारी, उपकरणे संशोधन विभाग, धरण सुरक्षितता संघटना, नाशिक ४ यांना  
माहितीसाठी अग्रेषित.

सहपत्र :- प्रत्येकी अहवालाची एक प्रत.

प्रत - ग्रंथालय, धरण सुरक्षा विभाग क्र. ३, नाशिक

सहपत्र :- अहवालाची दोन प्रती

प्रत - ग्रंथालय, मध्यवर्ती संकल्पचित्र संघटना, नाशिक

सहपत्र :- अहवालाची एक प्रत.

## FOREWORD

1. "The Annual Health Status Report of Identified Large Dams i.e. Large Dams Class-I and Large Dams Class-II in Marathwada Region for the Year 2019-20 is prepared, based on the Inspection Reports (Pre and Post Monsoon 2019) received from field officers and the test inspections carried out by Dam Safety Organisation during year 2019-20. The period of the report is from April 2019 to March 2020

2. This Report comprises of following parts, as per guidelines received from Dam Safety Monitoring Unit of Central Water Commission, New Delhi vide letter No. 3/19/NCDS/HS/DSM/2001 dt. 28/8/2002.

**Part-I** :Action Taken Report on the Health Status Report 2018 on deficiencies classified under Category I & II.

**Part-II** :Annual Consolidated Health Status Report prepared for the year 2019-20 as described above for identified Large Dam Class-I and Dam Class-II on the basis of deficiencies classified under Category No. 1, 2 & 3.

**Part-III** :Annual Report of Performance of Dam Instruments installed on identified Large Dams.

**Part-IV**: Annual Report of Performance of Meteorological Instruments installed on Large Dams.

**Part-V**: Status of NCDS documents submitted to D.S.O.of Class-I Dams in the Marathwada region

**Part-VI**: Data filling status on DHARMA portal

**Part-VII**: Annual Report of Inspections done by Mechanical Organisation. Deficiency Category-I & II from Health Status Report made available by Mechanical.

3. This report provides condensed summary of dam deficiencies noticed during inspection carried out by field officer and dam safety organisation in the year **2019**. Field officer / owners of dams are requested to remove deficiencies to achieve dam safety aspects and send compliance report earliest.

4. Inspecting officers are requested to follow the suggestion given in Annexure – 1 while carrying out forthcoming Pre/Post Monsoon inspections of dams.In Annexure – 1 general information viz. Time schedule of inspection, classification of dams, inspection authorities, Preparation of AHSR for class-I & class-II dams, NRLD register updation, categorization and standardization of deficiencies, monitoring of deficiency removal program is given, which will be helpful to field officers.

5 As Health Status Report of Large Dams of Class I & II is prepared by Dam Safety Organization, it is suggested to carry out inspections of Class-III dams and small dams by competent field officers and to prepare the Health Status Report of these dams at the Regional Level & forward it to DSO. This has been also persused through letters, but the response from field officers is not encouraging. So special attention needs to be paid by field Chief Engineers in this regard.

6. This report covers Dam Health Status of **282** Class-I & II dams owned by WRD and also covers **04** private dams inspected by DSO twice in the year.

7. Both pre & post monsoon inspection reports of **23** dams (Class-I- 15 & Class-II 8 dams) not received to DSO. It seems that, the field authorities have not carried out inspections of these 23 dams. Regional Chief Engineer should take note of this and ensure that inspection of all dams are carried out within stipulated time.

8. Director General, MERI, Nashik has issued technical circular in 2006 (No.5325 of 2006 dated 15/12/2006) regarding guide lines for periodical inspections of spillway gates by the mechanical Organisation information regarding no. of deficiencies observed during the inspections carried out by Mechanical Organisation are also incorporated in this Health Status Report.

**Statement showing total numbers of dams having deficiencies**

Sr. No	Dam owner	Year	Number of dams								
			Class I	Class II	Total	Class I dams having Deficiencies			Class II dams having Deficiencies		
						Cat-I	Cat-II	Cat-III	Cat-I	Cat-II	Cat-III
1	W.R.D	2018	<u>35</u> 35	<u>238</u> 06	<u>273</u> 41	<u>00</u> 00	<u>04</u> 14	<u>35</u> 14	<u>00</u> 00	<u>16</u> 00	<u>234</u> 00
		2019	<u>37</u> 37	<u>243</u> 17	<u>280</u> 54	<u>00</u> 00	<u>05</u> 26	<u>26</u> 32	<u>00</u> 00	<u>27</u> 07	<u>235</u> 16
2	Local Sector	2018	<u>00</u> 00	<u>01</u> 00	<u>01</u> 00	<u>00</u> 00	<u>00</u> 00	<u>00</u> 00	<u>00</u> 00	<u>00</u> 00	<u>01</u> 00
		2019	<u>00</u> 00	<u>02</u> 00	<u>02</u> 00	<u>00</u> 00	<u>00</u> 00	<u>00</u> 00	<u>00</u> 00	<u>00</u> 00	<u>02</u> 00
3	Private	2018	<u>00</u> 00	<u>04</u> 00	<u>04</u> 00	<u>00</u> 00	<u>00</u> 00	<u>00</u> 00	<u>00</u> 00	<u>04</u> 00	<u>04</u> 00
		2019	<u>00</u> 00	<u>04</u> 04	<u>04</u> 04	<u>00</u> 00	<u>00</u> 00	<u>00</u> 00	<u>00</u> 00	<u>04</u> 03	<u>04</u> 03
Grand Total		2018	<u>35</u> 35	<u>243</u> 06	<u>278</u> 41	<u>00</u> 00	<u>04</u> 14	<u>35</u> 14	<u>00</u> 00	<u>20</u> 00	<u>239</u> 00
		2019	<u>37</u> 37	<u>249</u> 21	<u>286</u> 58	<u>00</u> 00	<u>05</u> 26	<u>26</u> 32	<u>00</u> 00	<u>31</u> 10	<u>241</u> 19

**Civil  
Mechanical**

**Statement showing total number of deficiencies**

Sr. No	Dam owner	Year	Number of Deficiencies								
			Category -I			Category -II			Category -III		
			Class -I	Class -II	Total	Class -I	Class -II	Total	Class -I	Class -II	Total
1	W.R.D	2018	00	00	00	14	56	70	199	929	1128
		2019	00	00	00	20	83	103	281	952	1233
2	Local Sector	2018	00	00	00	00	00	00	00	00	00
		2019	00	00	00	00	00	00	00	11	11
3	Private										
		2018	00	00	00	00	06	06	00	17	17
		2019	00	00	00	00	08	08	00	20	20
		2018	00	00	00	00	06	06	00	13	13
		2019	00	00	00	00	06	06	00	13	13

**Statement showing total number of deficiencies in gated dams  
(As per data from Mechanical Organization)**

Sr. No.	Dam Owner	Year	Number of Gated Dams			No. of dams inspected		Number of Deficiencies								
								Category-I			Category-II			Category-III		
			CI I	CI II	Ttl	CI I	CI II	CI I	CI II	Ttl	CI I	CI II	Ttl	CI I	CI II	Ttl
1	WRD	2018	35	06	41	14	00	00	00	00	405	00	405	987	00	987
		2019	37	17	54	32	16	00	00	00	422	68	490	2168	618	2786
2	Private															
		2018	00	02	02	00	00	00	00	00	00	00	00	00	00	00
	2019	00	02	02	00	01	00	00	00	00	30	30	00	20	20	
	Municipal corporati on	2018	00	02	02	00	00	00	00	00	00	00	00	00	00	00
		2019	00	02	02	00	02	00	00	00	00	51	51	00	44	44
Grand Total		2018	35	10	45	00	00	00	00	00	405	00	405	987	00	987
		2019	37	21	58	00	19	00	00	00	422	149	571	2168	682	2850




**9. Observations / Findings in HSR-2019**

- 9.1 It is seen that in Marathwada region, there is no dam having Category-1 deficiency. It is noticed that 32 Class-I & II dams (11.35 %) have major deficiencies of Category- 2.
- 9.2 As per HSR-2018, in Marathwada region, in 20 dams (Class-I & Class-II) 70 nos. of deficiencies were observed. Field officers sent all Action Taken Reports but after scrutiny it is observed that compliance of deficiencies of none of the dam have been fully attended.
- 9.3 Regarding deficiencies in Mechanical components (Gates & Hoists etc.) in the 33 dams Category-2 deficiencies have been noticed and need attention of the project authorities.
- 9.4 The deficiencies shown in the present report are based on the pre/post monsoon inspections of the dams carried out by the field officers and reports of them received by this organisation. As such, the deficiencies and action taken there of is the sole responsibility of the field officers.
10. Being the dam owner , safety of the dam is the prime responsibility of the concerned field Executive Engineer. In order to ensure safety of dam/dams in his jurisdiction, he shall initiate the procedures for removal of deficiencies noticed in the pre-post monsoon inspection as well as pointed out in this HSR. Higher authorities shall accord timely sanction to works required for deficiency removal. Executive Director of the corporation are requested to make required funds available to the deficiency removal and monitor the progress periodically. This will help in keeping the dam safe.

I hope this report will serve desired expectations expressed by Dam Safety Monitoring Directorate of C.W.C.New Delhi. Any error, discrepancies omissions if any may please kindly be brought to the notice of this Organisation, so that it can be taken into consideration in the next report.

The efforts taken by the Superintending Engineer, Dam Safety Organisation, Nashik and his staff, for completion of this report are highly appreciated.

Place: Nashik-4  
Date: 21/05/2020

  
(A.P.Kohirkar)  
Director General  
Design, Training, Hydrology,  
Research and Safety  
MERI, Nashik-4.

# Annual Consolidated Health Status Report of Identified Large Dams in Marathwada Region

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**Annual Consolidated Health Status Report  
Of Identified Large Dams In  
Marathwada Region**

**PART – 1**

**Action Taken Report on Annual Health  
Status Report of Identified Large Dam  
for Year 2018**

**PART – 1 : Action Taken Report on Annual Health status Report of Identified Large Dams for year 2018**

**Marathwada Region**

**1.0 General**

The Annual Health Status Report of Marathwada Region for the year 2018 was prepared, submitted and circulated to all field officers and same was submitted to Government of Maharashtra vide letter No. DSO/DSD-3/MARATHWADA/STATUSREPORT-2018-19/288 dtd. 24.05.2019 by Dam Safety Organisation. Field officers were requested to carry out remedial measures to remove major deficiencies pointed out in HSR and send action taken report to DSO.

In most of the cases response received from field officers regarding information of initiation of administrative procedures viz. estimate preparation, reference to design organization or Mechanical organization. In some cases, even though remedial measures are taken no reports are sent to DSO. In such situation, the ATR part of this HSR doesn't give correct picture. Hence, it is necessary that ATR be sent to DSO only after careful scrutiny at the level of Chief Engineer. The agency wise no of dams having major deficiencies as per HSR 2018 and status of compliance is given in Table 1.1

In Marathwada region there are 274 (Class-I 35 & Class-II 239) large dams. Out of these dams, 20 (Class-I 4 & Class-II 16) dams have major deficiencies Action taken reports all the 20 dams are received from field officers. Agencywise list of these dams is given in Table 1.2

**1.1 Action Taken Report on Defeciencies of Large Dams Class I**

**1.1.1 Action Taken Report on Deficiency Category-1 of Large Dams Class I**

No such dams under this category is reported. (Table 1.3)

**1.1.2 Action Taken Report on Deficiency Category-2 of Large Dams Class I**

There are 04 dams reported under this category. Agencywise list of dams is given in Table 1.4

**1.2 Action Taken Report on Defeciencies of Large Dams Class II**

**1.2.1 Action Taken Report on Deficiency Category-1 of Large Dams Class II**

No such dams under this category is reported. (Table 1.5)

**1.2.2 Action Taken Report on Deficiency Category-2 of Large Dams Class II**

There are 16 dams reported under this category. Agencywise list of dams is given in Table 1.6

**1.3 Action Taken Report on Defeciencies of Private Large Dams**

In Marathwada region, there are 04 private dams. All these dams are classified as Class-II type.

**1.3.1 Action Taken Report on Deficiency Category-1 of Private dams Class I**

This region does not have Class-I private dam. (Table 1.7)

1.3.2 Action Taken Report on Deficiency Category-2 of Private dams Class I

This region does not have Class-I private dam. (Table 1.8)

1.3.3 Action Taken Report on Deficiency Category-1 of Private dams Class II

No such dams under this category is reported. (Table 1.9)

1.3.4 Action Taken Report on Deficiency Category-2 of Private dams Class II

There are 04 dams reported under this category. Agency wise list of dams is given in Table 1.10

Part- 2 of this report gives the details of Annual Health Status Report of identified large dams based on Pre & Post monsoon - 2019 inspection reports.

**Table - 1.1**

**Statement showing the position of compliance of Deficiencies Identified in Health Status Report ( 2018-19 )**

Sr. No	Agency	Major deficiencies reported in Large Dams			Status of Deficiencies removal as per compliance report received in DSO											
					Physically fully completed			Physically in progress			Administrative action initiated			Dams whose deficiencies not complied		
		Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<b>[A] Chief Engineer &amp; Chief Administrator, CADA, Aurangabad</b>																
(1)	CADA Aurangabad	00	05	05	00	00	00	00	03	03	00	00	00	00	02	02
(2)	CADA, Beed	01	09	10	00	00	00	00	00	00	01	06	07	00	03	03
<b>[B] Chief Engineer, (Water Resources), Aurangabad</b>																
(1)	NIC, Nanded	03	01	04	00	00	00	00	00	00	03	01	04	00	00	00
(2)	AIC, Aurangabad	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
(3)	BIPC, Parali (V)	00	01	01	00	00	00	00	00	00	00	01	01	00	00	00
<b>[C] 2] UPPER COMMISSIONER &amp; CHIEF ENGINEER, REGIONAL SOIL AND WATER CONSERVATION , PUNE</b>																
<b>(1) Regional water conservation officer, Soil &amp; water conservation Department, Aurangabad</b>																
(1)	RWSO, S&WC Dept. Aurangabad	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
<b>Govt.Total</b>		<b>04</b>	<b>16</b>	<b>20</b>	<b>00</b>	<b>00</b>	<b>00</b>	<b>00</b>	<b>03</b>	<b>03</b>	<b>04</b>	<b>08</b>	<b>12</b>	<b>00</b>	<b>05</b>	<b>05</b>

Sr. No	Agency	Major deficiencies reported in Large Dams			Status of Deficiencies removal as per compliance report received in DSO											
					Physically fully completed			Physically in progress			Administrative action initiated			Dams whose deficiencies not complied		
		Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<b>Private</b>																
1	Aurangabad Municipal Corporation, Aurangabad	00	02	02	00	00	00	00	00	00	00	00	00	00	02	02
2	Jalna Municipal Council, Jalna	00	01	01	00	00	00	00	00	00	00	00	00	00	01	01
3	Udgir Municipal Council, Udgir, Dist.Latur	00	01	01	00	00	00	00	00	00	00	00	00	00	01	01
<b>Private Total</b>		<b>00</b>	<b>04</b>	<b>04</b>	<b>00</b>	<b>00</b>	<b>00</b>	00	00	00	00	00	00	<b>00</b>	<b>04</b>	<b>04</b>
<b>Grand Total</b>		<b>04</b>	<b>20</b>	<b>24</b>	<b>00</b>	<b>00</b>	<b>00</b>	<b>00</b>	<b>03</b>	<b>03</b>	<b>04</b>	<b>08</b>	<b>12</b>	<b>00</b>	<b>09</b>	<b>09</b>



**Table - 1.2**

**List of dams whose deficiencies compliance report not received from field offices**

Sr. No.	Class –I			Class -II		
	Circle Office	Compliance report awaited	Total no of dams	Division Office	Compliance report awaited	Total no of dams
Govt. dams [A] CE, CADA Aurangabad				Govt. dams [A] CE, CADA Aurangabad		
1	2	3		4	5	6
(1)	CADA, Aurangabad	---	00	Jalna Irrigation Division, Jalna	---	00
				Aurangabad Irrigation Division, Aurangabad	---	00
(2)	CADA, Beed	---	00	Latur Irrigation Division No.2, Latur	---	00
				Jayakwadi Irrigation Division No.3, Beed	---	00
				Majalgaon Irri. Division, Parali (v) Beed	---	00
				Osmanabad Irrigation Division-1, Osmanabad	---	00
[B] CE, (WR), Aurangabad				[B] CE, (WR), Aurangabad		
(1)	NIC, Nanded	---	00	Purna Irrigation Division, Basmatnagar	---	00
(2)	BIPC, Parali (V)	---	00	Latur Minor Irrigation Division, Latur	---	00
Total..			00			00

[ C ] Private Dams				Private Dams		
(1)	Private Dams	---	00	Mahanagar Palika, 1)Kham 2) Harsul Aurangabad		02
				Jalna Nagar Parishad, Jalna	1) Ghanewadi	01
				Udgir Nagar Parishad, Udgir, Dist.Latur	1) Banshelki	01
Total..			00	Total..		04
Grand Total ..			04	Grand Total ..		20

**Table 1.3**

**Action Taken Report on Deficiency Category-1 of Large Dams Class I**

<b>Sr. No.</b>	<b>Name of Dam</b>	<b>Date of Inspection</b>	<b>Main component of Dam</b>	<b>Significant Deficiencies Noticed</b>	<b>Remedial Measures Suggested</b>	<b>Implimentation Status</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<p>----- No Such Dams under this category is reported -----</p>						

**Table 1.4**  
**Action Taken Report on Deficiency Category-2 of Large Dams Class- I**

Sr. No	Dam Features	Date of Inspection	Main component of Dam	Observations / Significant Deficiencies Noticed	Remedial Measures Suggested	Implimentation Status
1	2	3	4	5	6	7
<b>[A] Chief Engineer, CADA, Aurangabad</b> <b>(1) SE, CADA, BEED</b> <b>(a) Executive Engineer, Latur Irrigation Division-I Latur</b>						
1	Name :- <b>MANJRA</b> Year of completion :- 1980 Location :- Longitude :- 76° 15' 00" Latitude :- 18° 55' 00" Height :- 30 m Gross capacity :- 22.40 Mm <sup>3</sup> Design Spillway capacity :- 8370 Cumecs Sr.No.in National register of large Dams 2009 :- <b>MH09MH1585</b>	10/05/2018 23/12/2018	Foundation        Body Wall Spillway Structural performance	Considerable leaching from the seepage water and deposition of lime near the seepage exit spots. (A12) Leakage through guide wall is observed. (A15)  Emergency gate or wire rope, guide tees are rusted.  Gates end Arm holes are missing. Gates both side wire rope rusted. Gates hoists and gear train covers are very heavy to open & close. (A18)	Leaching material should be tested from MERI, Nashik & repair work should be taken in hand accordingly.  Necessary repairs should be carried out to stop the seepage. Repairs should be carried out.  Repairs should be carried out with the help of Mechanical organization	Yet to be attended  Necessary repairs are proposed in DRIP-II  <b>ATR received vide ltr no. TS-4-(1/3) dated 4/5/2020 (email)</b>
<b>[B] Chief Engineer (WR), Aurangabad</b> <b>(2) SE, NIC, NANDED</b> <b>(a) Executive Engineer, NID(South), Nanded</b>						
2	Name :- <b>LOWER MANAR</b> Year of completion :- 1964 Location :- Longitude :- 76° 45' 00" Latitude :- 19° 4' 30" Height :- 27 m Gross capacity :-139 Mm <sup>3</sup> Design Spillway capacity :- 8778 Cmeccs Sr. No. in National Register of large Dams - <b>MH09MH0170</b>	05/05/2018 25/12/2018	W.W.Bar & TC   Outlet	Scouring is observed at spillway D/s chainage 110-240 m. (A7)  Some leakage is observed through conduit, but it is not possible to examine the conduit of RBC from inside. (A4)	Repairs at the scoured section section should be carried out.  Amount and exact location of leakage should be ascertained and necessary repairs should be carried out.	Yet to be attended...  Work will be carried out in this season duly processing approval. <b>ATR received vide ltr no. 2295 dated 11/5/2020 (email)</b>

Sr. No	Dam Features	Date of Inspection	Main component of Dam	Observations / Significant Deficiencies Noticed	Remedial Measures Suggested	Implementation Status
1	2	3	4	5	6	7
<b>(b) Executive Engineer, PID, Basmatnagar, Hingoli</b>						
<b>3</b>	Name :- <b>YELDARI</b> Year of completion :- 1962 Location :- Longitude :- 76° 45' 00" Latitude :- 19° 4' 30" Height :- 51.23 m Gross capacity :-934.440 Mm3 Design Spillway capacity :- 10477 Cmc/s Sr. No. in National Register Of large Dams - <b>MH09HH0171</b>	31/05/2018 05/11/2018  27/03/2019	Relief Wells	Relief wells @ch. 299.90, 303.10, 305.00, 306, 306.50, 307.00, 308.50 are not in good condition.(A5)	Relief well should be surged & cleaned periodically.	Yet to be attended
			Foundation	Repairing to lighting arrangement of Drainage Gallery is essential.(A8)	Adequate LED lighting with water proofing PVC pipe casing should be provided.	All the works are proposed to be done through DRIP-II  <b>ATR received vide ltr no. 2295 dated 11/5/2020 (email)</b>
			Body Wall	Seepage water spring is observed above 50% capacity on Left flank of NOF @ Ch.40 & 60 m and level @ 450 & 200 and 451.500 m (A1)	Location of spring with reference to the water level in dam & gallery should be monitored. Necessary repairs should be carried out.	
			Drainage Gallery	Sweating observed on D/s face of dam. (A11)	Location & causes of sweating should be examined & necessary repairs should be carried out by using water proofing compound.	
				Gallery was flooded in middle portion (A8)	Dewatering of gallery should be carried out	
<b>(b) Executive Engineer, PID, Basmatnagar, Hingoli</b>						
<b>4</b>	Name :- <b>SIDDHESHWAR</b> Year of completion :- 1968 Location :- Longitude :- 75° 05' 30" Latitude :- 19° 0' 20" Height :- 38.10 m Gross capacity :-250.85 Mm3 Design Spillway capacity :- 10789 Cmc/s Sr. No. in National Register of large Dams - <b>MH09HH0172</b>	31/05/2018 05/11/2018	Earthen Dam D/s Drainage	Water logging, slushing condition or growth of aquatic weeds on the d/s of the dam between ch. 135 to 158 m. (A2) Standing pool of water is observed in the d/s of the dam. (A2)	River course should be cleaned	Yet to be attended
			Spillway gates	Spillway Gate no. 7 - wire rope is broken. (A18)	The D/S area of W. W. bar at least up to 200m, from bar shall be free from standing pool. Dewatering should also be carried out  All wire ropes needs to be replaced / repaired with the help of Mechanical Organisation.	Work will be carried out with the help of Mechanical Organisation  <b>ATR received vide ltr no. 2295 dated 11/5/2020 (email)</b>



**Table 1.5**  
**Action Taken Report on Deficiency Category-1 of Large Dams Class II**

Sr.No	Name of Dam	Date of Inspection	Main Component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested	Implimentation Status
1	2	3	4	5	6	7
<p style="text-align: center;">----- No Such Dams under this category is reported -----</p>						

**Table 1.6**  
**Action Taken Report on Deficiency Category-2 of Large Dams Class II**

Sr. No.	Dam Features	Date of Inspection	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested	Implementation Status
1	2	3	4	5	6	7
<b>[1] Chief Engineer, (CADA), Aurangabad</b> <b>(1) CADA, Aurangabad</b> <b>(a) Jalna Irrigation Division, Jalna</b>						
1	Name : <b>DHOKSAL</b> Date of completion :1964 Location : Longitude : 75° 21' 00" Latitude : 20° 44' 00" Gross Capacity :10.73 Mm3 Height : 17.70 m. Design spillway Capacity 219 m3/sec. Sr.No.National Register of Large Dams 2009 : <b>MH09MH0755</b>	15/05/2018 25/11/2018	W.W. Bar. & T/C.	W.W. Masonry of body wall is heavily disturbed. Leakage extent to 2 to 3 cusecs noticed. (B7)  Coping damaged through full length of w.w. bar.(B7)  Apron is fully disturbed.  EDA heavily damaged.(A14)  E/W and pitching required for full length.  Scouring to d/s is observed. (A7)	Necessary repairs should be carried out. Necessary treatment in the affected area shall be carried out to stop/minimize leakage.  Coping work should be carried out to full length of w.w. bar.  Necessary repairs should be carried out.  Necessary repairs should be carried out.  Pitching should be provided.  Provide necessary work arrangement to prevent scouring.	e-Tendering work in progress  e-Tendering work in progress  Completed  e-Tendering work in progress  Completed  e-Tendering work in progress <b>ATR received vide ltr no.1243 dated 12/5/2020 (email)</b>

Sr. No.	Dam Features	Date of Inspection	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested	Implementation Status
1	2	3	4	5	6	7
<b>(b) Aurangabad Irrigation Division, Aurangabad</b>						
2	Name : <b>SOYEGAON</b> Date of completion : 1967 Location : Longitude : 75°35'00' Latitude : 20°33'00" Gross Capacity : 2.54 Mm3 Height : 17.50m. Design spillway Capacity 480 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0148</b>	07/05/2018 01/12/2018	Outlet  W.W.Bar & TC	Outlet gate does not open/close smoothly. (B5)  Body of w.w. bar is damaged (B7)  Stilling basin is damaged slightly. (A14)  10 m portion of guide wall, divide wall are damaged. Guide bund also damaged at some portion (A16)	Necessary repairs should be carried out.  Necessary repairs should be carried out.  Necessary repairs should be carried out.  Necessary repairs should be carried out.	Not attended     <b>ATR received vide ltr no.1243 dated 12/5/2020 (email)</b>
3	Name : <b>BANOTI</b> Date of completion : 1968 Location : Longitude : 75°20'00' Latitude : 19°56'50" Gross Capacity : 3.22 Mm3 Height : 19.50m. Design spillway Capacity 525 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0165</b>	11/05/2018 05/12/2018 3/10/2018	Outlet  W.W.Bar & TC	Outlet well & gate are damaged and needs complete renovation (A6)  Masonry of w.w. bar is damaged at several places. (B7)  Heavy leakages noticed near spillway bar in masonry flank wall. (A15)  Retrogression/scouring is noticed in tail channel. (A7)	Necessary repairs should be carried out with the help of Mechanical Organisation.  Necessary repairs should be carried out  Necessary repairs should be carried out to stop the leakages.  Necessary repairs should be carried out	Completed  Not attended  90% leakages arrested  Not attended <b>ATR received vide ltr no.1243 dated 12/5/2020 (email)</b>
4	Name : <b>SUKHANA</b> Date of completion : 1967 Location : Longitude : 75°31'00' Latitude : 19°45'00" Gross Capacity : 21.34 Mm3 Height : 16.920m. Design spillway Capacity 2101 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0168</b>	25/04/2018 30/01/2019	Earthen Embankment  Outlet  W.W Bar & T.C..	Relief wells are not functioning properly. (A5)  Outlet gate damaged (B5)  Retrogression or scouring is noticed in tail channel about 200 m on d/s of the wall. (A7)	Necessary repairs should be carried out for proper functioning of relief wells..  Necessary repairs should be carried out with the help of Mechanical Organisation  Provide necessary work / arrangement to prevent scouring.	Not attended  Not attended  Not attended <b>ATR received vide ltr no.1243 dated 12/5/2020 (email)</b>

Sr. No.	Dam Features	Date of Inspection	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested	Implementation Status
1	2	3	4	5	6	7
5	Name : <b>DHAMNA</b> Date of completion :1974-75 Location : Longitude : 76° 50' 00" Latitude : 20° 27' 00" Gross Capacity : 10.72 Mm <sup>3</sup> Height : 13.45 m. Design spillway Capacity 1388 m <sup>3</sup> /sec. Sr No in National Register of Large Dams 2009 : <b>MH09LH0450</b>	8/5/2018 9/12/2018	Earthen Embankment       W.W Bar & T.C..	Top of dam is settled to the tune of 0.30m below TBL (B3)  Relief wells not functioning properly. (A5)  Leakage to the tune of 1 cusecs observed. Pointing disturbed.(B8)	Restore the dam section to designed section.  Necessary repairs should be carried out for proper functioning of relief wells..  Necessary repairs should be carried out to stop the leakages & provide pointing.	Completed  Revised estimate preparation is in progress  e-Tendering work in progress <b>ATR received vide ltr no.1243 dated 12/5/2020 (email)</b>
<b>(2) CADA, Beed</b>						
<b>(a) Latur Irrigation Division-2, Latur</b>						
6	Name :- <b>ANANDWADI (ST)</b> Date of completion :- 2002 Longitude :- 76° 49' 15" Latitude :- 18° 22' 30" Height :- 18.80 m Gross capacity :- 2.026 Mm <sup>3</sup> Design Spillway capacity :- 256.84 m <sup>3</sup> /sec. Sr. No. in National regi. Of large Dams 2009 :- <b>MH09MH1607</b>	<b>02/05/2018</b> <b>21/10/2018</b>	Earthen Embankment  W.W Bar & T.C..	Settlement of 0.50 to 0.60 m observed between Ch.150 to 210 m. (B3) Scouring at D/s side of w.w. bar up to foundation level noticed (A7) Damages observed at guide wall/divide wall needs repairs at ch. 27 to 40 m & 48 to 73 m. (A16) Retrogression/scouring in tail channel noticed. (A7)	Restore the dam section to designed section.  Provide necessary work / arrangement to prevent scouring.  Appropriate measures or repairs should be carried out.  Overburdens should be removed to make the effective flow of water in tail channel	Yet to be attended  Estimate is prepared and pending at Government level.  <b>ATR received vide ltr no. TS-4-(1/3) dated 4/5/2020 (email)</b>
7	Name :- <b>KENDREWADI</b> Date of completion :- 2013 Longitude :- 76°44'15" Latitude :- 18°37'00" Height :- 15.80m Gross capacity :- 2.258Mm <sup>3</sup> Design Spillway capacity :- 305.344 m <sup>3</sup> /sec. Sr. No. in National regi. Of large Dams 2009 :- <b>MH09MH2278</b>	<b>02/05/2018</b> <b>21/10/2018</b> <b>05/12/2018</b>	W.W Bar & T.C.	Guide bund is washed out / damaged and the material is spread out in nearby field & river portion (A16)  Right side guide bund damaged due to heavy rain in 9/2016	Appropriate measures or repairs should be carried out.  Necessary repairs should be carried out.	Yet to be attended  Estimate is under preparation.  <b>ATR received vide ltr no. TS-4-(1/3) dated 4/5/2020 (email)</b>

Sr. No.	Dam Features	Date of Inspection	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested	Implementation Status
1	2	3	4	5	6	7
8	<p>Name :- <b>HALAD WADHONA (ST)</b>  Date of completion :- 2001  Longitude :- 77°13'55"  Latitude :- 18°36'35"  Height :- 19.15m  Gross capacity :- 3.693 Mm<sup>3</sup>  Design Spillway capacity :- 442.28 m3/sec.  Sr. No. in National regi. Of large Dams 2009 :- <b>MH09LH1510</b></p>	<p><b>22/05/2018</b>  <b>11/12/2018</b>  <b>04/12/2018</b></p>	<p>W.W.Bar &amp; TC</p>	<p>32 m long and 0.90 m in height of w.w. bar not constructed.(B7)</p> <p>Guide bund is broken in some patches. (A16)</p>	<p>Balance work should be completed immediately.</p> <p>Necessary repairs should be carried out.</p>	<p>Yet to be attended</p> <p>Preparation of estimate is in progress.</p> <p><b>ATR received vide ltr no. TS-4-(1/3) dated 4/5/2020 (email)</b></p>
9	<p>Name :- <b>SONALA(ST)</b>  Date of completion :- 2006  Longitude :- 77°08'10"  Latitude :- 18°35'16"  Height :- 16.3m  Gross capacity :- 5.491Mm<sup>3</sup>  Design Spillway capacity :- 1119 m3/sec.  Sr. No. in National regi. Of large Dams 2009 :- <b>MH09MH2289</b></p>	<p><b>29/05/2018</b>  <b>11/12/2018</b></p>	<p>Earthen Embankment</p> <p>W.W.Bar &amp; TC</p>	<p>Few quantity of Standing water observed at junction of guide wall &amp; embankment noticed. (A2)</p> <p>Scouring at D/s side of w.w. bar up to foundation level noticed (A7)</p> <p>At Ch.50 to 150 m, guide /divide wall is damaged. (A16)</p>	<p>Leakage should be located, monitored &amp; necessary repair work should be carried out to prevent leakages.</p> <p>Provide necessary work / arrangement to prevent scouring.</p> <p>Appropriate measures or repairs should be carried out.</p>	<p>Yet to be attended</p> <p>Estimate is prepared and pending at Government level.</p> <p><b>ATR received vide ltr no. TS-4-(1/3) dated 4/5/2020 (email)</b></p>
10	<p>Name :- <b>HALLI (KH)</b>  Date of completion :- 2008  Longitude :- 76°51'30"  Latitude :- 18°08'00"  Height :- 21.00m  Gross capacity :- 1.467Mm<sup>3</sup>  Design Spillway capacity :- 138.854 m3/sec.  Sr. No. in National regi. Of large Dams 2009 :- <b>MH09MH2274</b></p>	<p><b>02/05/2018</b>  <b>21/10/2018</b></p>	<p>W.W.Bar &amp; TC</p>	<p>Scouring on d/s side of bar. (A7)</p> <p>EDA is not in good condition (A14)</p> <p>Guide bund is totally washed out. (A16)</p> <p>Retrogression / souring in tail channel noticed. (A7)</p>	<p>Provide necessary work / arrangement to prevent scouring.</p> <p>Necessary repairs should be carried out.</p> <p>Necessary repairs / reconstruction of guide wall should be carried out.</p> <p>Overburdens should be removed to make the effective flow of water in tail channel</p>	<p>Yet to be attended</p> <p>Preparation of estimate is in progress.</p> <p><b>ATR received vide ltr no. TS-4-(1/3) dated 4/5/2020 (email)</b></p>



Sr. No.	Dam Features	Date of Inspection	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested	Implementation Status
1	2	3	4	5	6	7
<b>(b) Jayakwadi Irrigation Division-3, Beed</b>						
11	Name :- <b>BINDSURA</b> Date of completion :- 1955 Location :- Longitude :- 75° 44' 30" Latitude :- 18° 45' 45" Height :- 18.00 m Gross capacity :- 9.57Mm <sup>3</sup> Design Spillway capacity :- 1654 m <sup>3</sup> /sec. Sr. No. in National regi. Of large Dams 2009 :- <b>MH09MH0072</b>	07/05/2018 16/11/2018	E/DAM  W.W. Bar. & T/C.	There is standing pool of water at ch. 371 m. (A2)  Masonry of Spillway bar damaged in some portion. There is leakage in some portion. (B7)	The D/S area of W. W. bar at least up to 200m, from bar shall be free from standing pool. Dewatering should also be carried out.  Masonry of Spillway bar should be repaired. Repair work to prevent leakages should be carried out.	Yet to be attended  Work is proposed in DRIP-II .  <b>ATR received vide ltr no. TS-4-(1/3) dated 4/5/2020 (email)</b>
12	Name :- <b>LOKARWADI</b> Date of completion :- 2001 Location :- Longitude :- 75° 54' 00" Latitude :- 18° 54' 00" Height :- 23.91 m Gross capacity :- 2.23 Mm <sup>3</sup> Design Spillway capacity :- 341 m <sup>3</sup> /sec. Sr. No. in National regi. Of large Dams 2009:- -- <b>MH09MH2280</b>	16/05/2018 26/11/2018	E / Dam.  Outlet  W.W. Bar. & T/C.	There are standing pool of water observed at d/s of gorge portion at nalla level. (A2)  Leakage is observed at nalla level (Discharge 0.25 cusecs) (A3)  Leakage through gate observed (0.30 cusecs) (B12)  Leakage through H.R and E/W joint (B5)  Banking is required at some patches. (A16)  Leakages through d/s of w.w. bar in tail channel from direction of wing wall & w.w. body wall joint observed. (B7)	The D/S area of W. W. bar at least up to 200m, from bar shall be free from standing pool. Dewatering should also be carried out.  Necessary repairs should be carried out to prevent leakages.  Necessary repairs should be carried out to prevent leakages.  Provide necessary arrangement to prevent standing leakage at joint of HR & E/W.  Necessary repairing work should be carried out immediately.  Necessary repairs should be carried out to prevent leakages.	Yet to be attended  Work will be carried out with the special visit of DSO  <b>ATR received vide ltr no. TS-4-(1/3) dated 4/5/2020 (email)</b>

Sr. No.	Dam Features	Date of Inspection	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested	Implementation Status
1	2	3	4	5	6	7
<b>( c ) Majalgaon Irrigation Division, Parali (V), Dist. Beed</b>						
<b>13</b>	Name :- <b>KASARI</b> Date of completion :- 1988 Location :- Longitude :- 75° 04' 30" Latitude :- 18° 45' 00" Height :- 15.52 m Gross capacity :- 0.872 Mm <sup>3</sup> Design Spillway capacity :- 142.80 m <sup>3</sup> /sec. Sr. No. in National regi. Of large Dams 2009 :- MH09MH0854	25/11/2017 30/11/2018	Earthen Embankment  Outlet	Leakage throughout D/s side of dam noticed. (A1)  Outlet well not in good condition (A5)	Necessary arrangement should be provided to stop leakage.  Necessary repairs should be carried out.	Yet to be attended  Preparation of estimate is in progress.  <b>ATR received vide ltr no. TS-4-(1/3) dated 4/5/2020 (email)</b>
<b>(d) Osmanabad Irrigation Division-1, Osmanabad</b>						
<b>14</b>	Name : <b>CHORKHALI</b> Date of completion :1996 Location : Longitude : 75° 54' 00" Latitude : 18° 20' 00" Gross Capacity: 3.434 Mm <sup>3</sup> Height : 20.28 m. Design spillway Capacity 291 m <sup>3</sup> /sec. Sr No in National Register of Large Dams 2009 : MH09MH1363	08/05/2018 29/10/2018	W.W.Bar & TC	End weir wall of stilling basin is damaged. (B7)  Junction between embankment & spillway bar is not intact. (3.35)  Scouring noticed in tail channel (A7)	Necessary repairs should be carried out.  Necessary repairs should be carried out.  Provide necessary work / arrangement to prevent scouring.	Yet to be attended  Preparation of estimate is in progress.  <b>ATR received vide ltr no. TS-4-(1/3) dated 4/5/2020 (email)</b>

Sr. No.	Dam Features	Date of Inspection	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested	Implementation Status
1	2	3	4	5	6	7
<b>[2] Chief Engineer(WR), Aurangabad</b>						
<b>(1) Nanded Irrigation Circle, Nanded</b>						
<b>(a) Purna Irrigation Division, Hingoli, Basmatnagar</b>						
<b>15</b>	Name : <b>PEDGAON</b> Date of completion : 1975. Location : Longitude : 77° 15' 00" Latitude : 19° 45' 00" Gross Capacity :26.16 Mm3 Height : 10.20 m. Design spillway Capacity 2395 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09LH0502</b>	11/05/2018 25/11/2018	E / Dam.  Outlet  W.W.Bar & T.C.	Settlement is observed @ 0.40 to 0.50 m. (B1) Water seepage through body wall of dam is observed within 200m. Stem rod is bent up Leakage through gate (B5) Scouring / retrogression on d/s of spillway bar @ 50 m. interval noticed in T/C (A7)	Dam section to be brought to correct design profile and level by adding earthwork duly compacted properly.  The repair shall be carried out with the help of Mechanical Organization  Overburdens should be removed to make the effective flow of water in tail channel	Yet to be attended  Estimate is prepared. Mechanical organisation is communicated for repairs. <b>ATR received vide ltr No.2295 dated 11/5/2020 (email)</b>
<b>(2) Beed Irrigation Project Circle, Parali (V), Dist. Beed</b>						
<b>(a) Latur Minor Irrigation Division, Latur</b>						
<b>16</b>	Name : <b>GHONSHI M.I.Tank</b> Date of completion : 1991 Location : Longitude : 77° 09' 20" Latitude : 18° 31' 45" Gross Capacity :1.247 Mm3 Height : 19.85 m. Design spillway Capacity 494.08 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09LH1226</b>	29/5/2018 NA	E/Dam  Outlet	Settlement is noticed. Dam top is shrunk 1.0 to 1.50 m depth in chainage 90 m to 840 m. (B1)  Wet patches at d/s of dam at THL level from RD 270 m to 390 m (A1)  Outlet gate are not open & close smoothly.	Dam section to be brought to correct design profile and level by adding earthwork duly compacted properly  Necessary repairs should be carried out to prevent wet patches and leakages.  Necessary repairs should be carried out with the help of Mechanical Organisation.	Yet to be attended  (Estimate is prepared and submitted to concerned CE, SE and Mechanical Organisation)  <b>ATR received vide ltr No. 1085 dated 6/5/2020 (email)</b>

**Table 1.7**

**Action Taken Report on Deficiency Category-1 of Private dams Class I**

<b>Sr. No.</b>	<b>Name of Dam</b>	<b>Date of Inspection</b>	<b>Main component of Dam</b>	<b>Significant Deficiencies Noticed</b>	<b>Remedial Measures Suggested</b>	<b>Implimentation Status</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<p>-----This region does not have Class-I private dam -----</p>						

**Table 1.8**

**Action Taken Report on Deficiency Category-2 of Private dams Class I**

<b>Sr. No.</b>	<b>Name of Dam</b>	<b>Date of Inspection</b>	<b>Main component of Dam</b>	<b>Significant Deficiencies Noticed</b>	<b>Remedial Measures Suggested</b>	<b>Implimentation Status</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<p>-----This region does not have Class-I private dam -----</p>						

**Table 1.9**

**Action Taken Report on Deficiency Category-1 of Private dams Class II**

<b>Sr. No.</b>	<b>Name of Dam</b>	<b>Date of Inspection</b>	<b>Main component of Dam</b>	<b>Significant Deficiencies Noticed</b>	<b>Remedial Measures Suggested</b>	<b>Implimentation Status</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<p>----- No Such Dams under this category is reported -----</p>						

Table 1.10

## Action Taken Report on Deficiency Category-2 of Large Private Dams Class- II

Sr. No.	Name of Dam	Date of Inspection	Main Component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested	Implimentation Status
1	2	3	4	5	6	7
<b>(a) EXECUTIVE ENGINEER, WATER SUPPLY AURANGABAD MUNICIPAL CORPORATION, AURANGABAD.</b>						
<b>1</b>	Name : <b>KHAM ( SANGVI)</b> Date of completion : 1968. Location : Longitude: 75° 21' 247" Latitude : 19° 56' 17" Gross Capacity :29.70 Mm3 Height : 10.20 m. Design spillway Capacity N.A. m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0175</b>	3/10/2018 26/3/2019	Drains  Outlet	Drains are not free from silt & vegetation (B2)  Slab of outlet well is damaged & railing and planks are absent. (B5) Relevant Documents for inspection of dam not available on site.	The tail end of C-drains shall be open & cleaned and shall be kept free flowing.  Necessary repairs may be carried out.  It should be maintained on site for inspection.	Yet to be attended
<b>2</b>	Name : <b>OVER ( HARSUL )</b> Date of completion : 1964 Location : Longitude : 75° 19' 56" Latitude : 19° 50' 32" Gross Capacity : N.A.. Mm3 Height : 16.0 m. Design spillway Capacity N.A.. m3/sec. Sr.No.in National Register of Large Dams 2009 : <b>MH09MH0101</b>	3/10/2018 26/3/2019	E / Dam.  Drains	Undulation on top of dam observed.(B1)  Drains are not free from silt & Vegetation (B2)  Relevant Documents for inspection of dam not available on site.	Dam section to be brought to correct design profile and level by adding earthwork duly compacted properly.  The tail end of C-drains shall be open & cleaned & shall be kept free flowing.  It should be maintained on site for inspection.	Yet to be attended

Sr. No.	Name of Dam	Date of Inspection	Main Component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested	Implimentation Status
1	2	3	4	5	6	7
<b>(b) EXCUTIVE ENGINEER, (WATER SUPPLY), JALNA NAGAR PARISHAD, JALNA</b>						
<b>3</b>	Name : <b>GHANEWADI</b> Date of completion : 1975. Location : Longitude: 75° 51' 03" Latitude : 19° 54' 42" Gross Capacity :14.44 Mm3 Height : 16.00 m. Design spillway Capacity N.A.. m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0053</b>	3/10/2018	E / Dam  Drains	Section of dam is not as per design Section. (B1)  Toe drains are not free from silt & vegetation (B3)  Relevant Documents for inspection of dam not available on site.	Dam section to be brought to correct design profile and level by adding earthwork duly compacted properly.  The d/s area at least up to above 200m. from toe, shall be free from Stagnation. The area should be well drained.  It should be maintained on site for inspection.	Yet to be attended
<b>(c) CITY ENGINEER, (WATER SUPPLY), UDGIR NAGAR PARISHAD, UDGIR, DIST. LATUR</b>						
<b>4</b>	Name : <b>BANSHELKI</b> Date of completion : 1968. Location : Longitude: 77° 05' 32" Latitude: 18° 21' 53" Gross Capacity :NA Mm3 Height : 23.00 m. Design spillway Capacity N.A.. m3/sec. Sr No in National Register of Large Dams 2009 : <b>NA</b>	4/12/2018	E/Dam	Rain cuts are noticed. Dam section is not as per design. Undulations are noticed.  Pitching is disturbed throughout the dam length. (B3)	Dam section to be brought to correct design profile and level by adding earthwork duly compacted properly.  Pitching should be relayed/replaced.	Yet to be attended



**Consolidated Health Status Report  
of Identified Large Dams In  
Marathwada Region**

**PART – 2**

**Annual Health Status Report of Identified Large  
Dams Based on  
Pre & Post Monsoon 2019 Inspection Reports  
(Year 2019-2020)**

## **PART – 2 Annual Health Status Report of Identified Large Dams Based on Pre & Post Monsoon 2019 Inspection Reports (2019-2020)**

### **2.1 General**

The Government of Maharashtra has issued instructions for pre and post monsoon inspection of the dams. Dam Safety Organisation, Nashik has issued guidelines regarding questionnaire for inspecting dams by field officers vide letter (Marathi) DSO/DSD-III/128/47/dated 19-1-1998 and also conveyed discrepancies, errors & omissions noticed after the scrutiny of inspections reports time to time. It is again requested to issue orders to field officers to perform careful inspection according to the guidelines for proper monitoring of safety of dams.

New format of questionnaire as per CWC guidelines has been issued to field offices and accordingly from this year field officers are submitting pre-post inspection reports.

The important information like time schedule of inspection, classification of dams, competent authority of dam inspection, preparation of health status report, categorization of deficiencies, monitoring of deficiency removal program, standard procedure for confirmation and removal of category – I deficiency and suggestions for inspection by field officers are given vide Annexure – 1. (Page No. 86)

Considering the various deficiencies observed over dams of Maharashtra over last few years , Dams Safety Organisation have Standardized the category wise deficiencies and these are given vide Annexure – 2. (Page No.90)

### **2.2 Inspections of dam.**

A systematic approach & working methodology is very essential to monitor the safety aspects of the dams. Maharashtra which is one of the pioneer state has established an elaborate set up for effective monitoring of dams. The periodical inspections of dams are completed by concerned field officers and the inspection reports are sent to Dam Safety Organisation for further action.

Dam Safety Organisation ,Nashik carries out scrutiny of the inspection reports received from field officers for class-I & II dams, significant & serious deficiencies observed during scrutiny are immediately intimated to field officers to carry out remedial measures. To keep a check on the inspections carried out at field level, Test inspections are carried out by Dam Safety Organisation as a third party inspection. The annual Dam inspection program of Dam safety organisation is prepared and is sanctioned by Director General, (D.T.H.R.S.) M.E.R.I., Nashik. In Maharashtra, there are about 52 private dams owned by Tata Power, Sahara India Pvt.Ltd.etc. and by Urban Local bodies and Power generation companies. Dam Safety Organisation carries out pre and post monsoon inspections of private dams on consultancy basis.

For Marathwada region following officers were inspected dams and taken efforts to prepare this report.

- 1) Y.K.Bhadane, Superintending Engineer
- 2) P.H.Mohite,, Executive Engineer
- 3) C.T.Mondhe, Sub Divisional Engineer
- 4) V.P.Bildikar, Sectional Engineer.
- 5) S. B. Hire, Junior Scientific Assistant

### **2.2.1 Dam inspection by field officers**

There are 37 no. of Class - I Govt. dams (15 dams & 22 barrages) & 245 nos. (244 dams & 01 barrage) Class - II dams in Marathwada region. Pre monsoon & Post monsoon inspection report of none of these Class-I and Class-II dams received as per schedule. However as on 18/05/2020 inspection reports of 22 class-I dams and 237 class-II dams are received and have been incorporated in this status report. The circle office wise breakup of dams and status of inspection report received is given in Table 2.1. List of dams of which inspection report were not received in DSO from field officers is given in table no. 2.2.

A drive of dam inspection by field officers was taken as per WRD letter no. शासन पत्र क्र. संकीर्ण -२०१९, प्र.क्र. (१४१/१९) /सिं.व्य. (कामे) दि. ६/७/२०१८ . During this drive 05 dams from Marathwada region were found serious leakages. (Class-II - Dhamna,Ajanta Andhari, Tintraj and Class-III Yellori & Dapegaon).

### **2.2.2 Dam Inspection by Dam Safety Organisation.**

As per Annual inspection programme, DSO has inspected 07 nos. Class-I dams and 25 nos. of Class-II dams. These 05 dams (Class-II - Dhamna,Ajanta Andhari, Tintraj and Class-III Yellori & Dapegaon) were inspected additionally alongwith annual inspection programme. Tintraj dam was additionally inspected by DSO as per field Superintending Engineer's request. Also 04 class-II private dams in the region were inspected by DSO on consultancy basis. List of dams inspected is given in Table 2.3 Also the photographs of some of inspections by Dam Safety Organisation are appended as Annexure – 3

## **2.3 Overall health status of large dams**

Circlewise number of large dams in Marathwada region where deficiencies are noticed are summarized and given in table no.-2.4. Damwise number of category – II deficiencies noticed are given in table no 2.5. Over all there are 282 dams and there are 32 dams where category – II deficiencies are noticed. Agencywise, damwise and categorywise detailed status is given in next sections.

## **2.4 Health status report of Class-I dams**

### **2.4.1 Health status report of Class-I dams with Category-1 deficiency.**

Details of Class-I dams with category 1 deficiency are given in table 2.6. Out of 37 dams Nil dams are reported under this category.

### **2.4.2 Health status report of Class-I dams with Category-2 deficiency.**

Details of class – I dams, with category – 2 deficiencies are given in table 2.7. Out of 37 dams 05 dams have been identified as having category-2 deficiencies.

### **2.4.3 Health status report of Class-I dams with Category-3 or NIL deficiency.**

Details of class-I dams with category – 3 or Nil deficiency are given in table 2.8. Out of 37 dams 37 dams have been identified as having category-3 deficiencies. And no dams having NIL deficiencies.

## **2.5 Health status report of Class-II dams**

### **2.5.1 Health status report of Class-II dams with Category-1 deficiency.**

Details of class – II dams, with category – 1 deficiencies are given in table 2.9. Out of 245 dams NIL dams are reported under this category.

### **2.5.2 Health status report of Class-II dams with Category-2 deficiency.**

Details of class – II dams, with category – 2 deficiencies are given in table 2.10. Out of 245 dams 27 dams have been identified as having category-2 deficiencies.

### **2.5.3 Health status report of Class-II dams with Category-3 or NIL deficiency.**

Details of class – II dams, with category – 3 or Nil deficiencies are given in table 2.11. Out of 245 dams 231 dams have been identified as having category-3 deficiencies and 06 dams having NIL deficiencies.

## **2.6 Health status report of Class-III dams**

### **2.6.1 Criteria of Inspection of Class –III dams.**

The Govt. of Maharashtra has restricted the scope of DSO in monitoring safety aspects to the extent of identified large dams . i.e. Class-I and Class-II dams only in view of large no. of dams and limited staff of DSO. The safety monitoring of other large dams (Class-III) including preparation of HSR rests with the respective regional Chief Engineers.

Hence every year for Class III dams, based on inspection report, HSR of Class – III dams need to be prepared by respective Chief Engineer and sent it to Dam Safety Organisation for record.

## 2.6.2 Districtwise and classwise break up of number of dams

Classwise Number of dams in each district are given as below..

District	Large Dam Class- I	Large Dam Class- II	Large Dam Class- III	Grand Total
AURANGABAD	5	33	51	89
JALNA	4	16	23	43
PARBHANI	5	6	10	21
HINGOLI	1	4	11	16
BEED	3	65	58	126
LATUR	10	57	38	105
NANDED	6	30	48	84
OSMANABAD	2	34	44	80
YEOTMAL	1	0	0	1
<b>TOTAL</b>	<b>37</b>	<b>245</b>	<b>283</b>	<b>565</b>
PRIVATE	0	4	0	4
<b>GRAND TOTAL</b>	<b>37</b>	<b>249</b>	<b>283</b>	<b>569</b>

Graphical representation of district wise and class wise dams in the region is given vide

Chart No.1 (Page No.83)

## 2.7 Health status report of Private Class-I dams

### 2.7.1 Health status report of Private Class-I dams with Category-1 deficiency.

NIL no. of class-I private dams are there in this region. Details of class-I Private dams with category 1 deficiency given in Table 2.12.

### 2.7.2 Health status report of Private Class-I dams with Category-2 deficiency.

NIL no. of class-I private dams are there in this region. Details of class-I Private dams with category 2 deficiency given in Table 2.13.

### 2.7.3 Health status report of Private Class-I dams with Category-3 deficiency.

NIL no. of class-I private dams are there in this region. Details of class-I Private dams with category 3 deficiency given in Table 2.14.

## 2.8 Health status report of Private Class-II dams

### 2.8.1 Health status report of Private Class-II dams with Category-1 deficiency.

Out of 04 dams NIL dams are reported under this category. Details of class-I Private dams with category 1 deficiency given in Table 2.15.

### 2.8.2 Health status report of Private Class-II dams with Category-2 deficiency.

Out of 04 dams all the 04 dams have been identified as having category-2 deficiencies. Details of class-II Private dams with category 2 deficiency given in Table 2.16.

### 2.8.3 Health status report of Private Class-II dams with Category-3 deficiency.

Out of 04 dams all the 04 dams have been identified as having category-3 deficiencies. Details of class-II Private dams with category 3 deficiency given in Table 2.17.

## 2.9 Observations

1. Significant category I & II Deficiency wise list of dams for Class-I & Class-II dams is given in Table 2.18 and table 2.19 respectively. Also graphical representation of significant category I & II deficiencies observed for Class-I & II dams are shown in chart 2 & chart -3 respectively.
2. Top five major deficiencies found in Class-I dams in Marathwada region are as follows -
  - a) **A 18** :Wire ropes of hoist not in good condition/hoisting structure damaged/cracked – (02 Dam)
  - b) **A-8**: Drainage gallery in accessible / no adequate lighting/no dewatering arrangement failure. (02 Dam)
  - c) **A-11** : Sweating/seepages through downstream of masonry dams. (02 Dams)
  - d) **A.1**: Boil leakage/ seepage/ wet patches/ slushiness in Earthen Dam – ( 01 Dam )
  - e) **A 2**: Standing pool / Ponding / Water Logging / Slushy condition on D/S of Dam – (01 Dam)
3. Likewise top five major deficiencies found in Class-II dams in Marathwada region are as follows -
  - a) **B 7**: Waste weir/waste weir bar not in good condition/coping damaged/leakage through waste weir. (15 Dam)
  - b) **A 7** : Retrogression /scouring in tail channel – (08 Dam)
  - c) **A-16** Damages/foundation erosion/scouring / undermining observed in vicinity of flank walls/guide walls / junction wall / return valves (08 Nos)
  - d) **A-6**: Outlet well is damaged / not in good condition / cracks observed / jets of water in well – (06 Dam)
  - e) **A-1**: Boil leakage/ seepage/ wet patches/ slushiness in Earthen Dam – ( 06 Dam )

**Table 2.1**

**Status of receipt of Pre / Post monsoon inspection reports -2019**

Sr No	Name of Office	Total dams			Both Pre & Post IR received			Either <u>Pre</u> or IR not received Post			Pre & Post both IR not received		
		Class -I	Class -II	Total	Class-I	Class -II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
	[1] C.E. & Chief Administrator, CADA, Aurangabad												
1	CADA Aurangabad	09	44	53	00	00	00	05	04	09	05	04	09
								09	44	53			
2	CADA Beed	14	148	162	04	144	148	10	04	14	10	04	14
								10	04	14			
	[2] C.E., W.R., Aurangabad												
3	B.I.P.C. Parali (V)	01	08	09	01	08	09	00	00	00	00	00	00
								00	00	00			
4	A.I.C, Aurangabad	01	11	12	01	00	01	00	00	00	00	00	00
								00	11	11			
5	N.I.C., Nanded	12	32	44	12	30	42	00	00	00	00	00	00
								00	02	02			
	[ 3] UPPER COMMISSIONER & CHIEF ENGINEER, REGIONAL SOIL AND WATER CONSERVATION , PUNE												
	(1) Regional water conservation officer, Soil & water conservation Department, Aurangabad												
6	RWCO, S&WC Dept, Aurangabad	00	02	02	00	01	01	00	01	01	00	00	00
								00	00	00			
	PRIVATE DAMS												
7	DSO, Nashik	00	04	04	00	04	04	00	00	00	00	00	00
								00	00	00			
	Grand Total	37	249	286	18	187	205	15	09	24	15	08	23
								19	61	80			

**Table 2.2**  
**List of Dams of which Inspection Reports were not received**

Sr. No	Name of Office	Name of Dam of which inspection reports not received					
		Both for Pre & Post-2019		Either for Pre or Post-2019			
				Pre monsoon 2019		Post monsoon 2019	
		Class-I	Class-II	Class-I	Class-II	Class-I	Class-II
1	2	3	4	5	6	7	8
1	<b>[1] C.E.(CADA), Aurangabad</b>						
	(1) CADA Aurangabad	1.Apegaon HL Barrage 2.Mangrul HL Barrage 3.Rajatakli HL Barrage 4.Jogladevi HL Barrage 5.Loni Savangi HL Barrage	1. Bhilawani 2. Manyad 3.Tembhapuri 4.Pimpaldari	1.Apegaon HL Barrage 2.Mangrul HL Barrage 3.Rajatakli HL Barrage 4.Jogladevi HL Barrage 5.Loni Savangi HL Barrage	1. Bhilawani 2. Manyad 3.Tembhapuri 4. Pimpaldari	1.Apegaon HL Barrage 2.Mangrul HL Barrage 3.Rajatakli HL Barrage 4.Jogladevi HL Barrage 5.Loni Savangi HL Barrage 6.Jayakwadi 7.Bordahegaon 8.Narangi 9.Lower Dudhna	1.Ajanta Andhari 2.Ambadi 3.Banoti 4.Chapner 5.Devhari 6.Dheku 7.Girija 8.Gadadgad 9.Kaldari 10.Kelgaon (Sillod) 11.Kesapuri 12.Khelna 13.Lahuki 14.Loni(Kannad) 15.Nimbhora 16.Nirgudi 17.Sanjul 18.Soygaon 19.Sukhana 20.Varthan 21.Waghdara 22.Anjana Palashi 23.Purna Neopur 24.Pardari 25.Bhilwani 26.Manyad 27.Tembhapuri 28.Dhoksal 29.Jivrekha



							30.Jui 31.Kalyan Pir 32.Kalyan Girija 33.Konad 34.Pimparkhed (partur) 35.Upper Dudhna 36.Galhati 37.Dhamna 38.Bharaj 39.Bhoshi 40.Karpara 41.Masoli 42.Padali 43.Tandulwadi (Palam) 44.Pimpaldari (Gangakhed)
	(2) CADA, Beed	1.Khulgapur HL Barrage 2.Bindgihal LT Barrage 3.Sai HL Barrage 4.Takalgaon Devla HL Barrage 5.Shivni HL Barrage 6.Hosur Barrage 7.Gunjarga KT Weir 8.Rajegaon KT Weir 9.Dhanegaon HL Barrage 10.Karsa pohregaon Barrage	1.Tawarja 2.Kasarbalkund 3. Bhusni LL Barrage 4.Panharwadi MI (Shirur Anantphal)	1.Khulgapur HL Barrage 2.Bindgihal LT Barrage 3.Sai HL Barrage 4.Takalgaon Devla HL Barrage 5.Shivni HL Barrage 6.Hosur Barrage 7.Gunjarga KT Weir 8.Rajegaon KT Weir 9.Dhanegaon HL Barrage 10.Karsa pohregaon Barrage	1.Tawarja 2.Kasarbalkund 3. Bhusni LL Barrage 4.Panharwadi MI Tank	1.Khulgapur HL Barrage 2.Bindgihal LT Barrage 3.Sai HL Barrage 4.Takalgaon Devla HL Barrage 5.Shivni HL Barrage 6.Hosur Barrage 7.Gunjarga KT Weir 8.Rajegaon KT Weir 9.Dhanegaon HL Barrage 10.Karsa pohregaon Barrage	1.Tawarja 2.Kasarbalkund 3. Bhusni LL Barrage 4.Panharwadi MI (Shirur Anantphal)

1	2	3	4	5	6	7	8
2	[2] C.E.,(W.R.), Aurangabad						
	(1) AIC, Aurangabad						1.Rawala 2.Nimkhedi 3.Halda Jalki 4.Phulambri 5.Kolwadi MI Tank(Lokar) 6. Pimpalwadi 7.Chandai Ekco LMP 8.Banegaon LMP 9.Palaskheda LMP 10.Taltondi MI Tank 11.Pimpalwadi ST
	(2)BIPC, Parali (V)						
	(3)NIC, Nanded						1.Undri Manjri 2.Jamkhed
3	<b>[ 3] UPPER COMMISSIONER &amp; CHIEF ENGINEER, REGIONAL SOIL AND WATER CONSERVATION , PUNE</b> <b>Regional water conservation officer, Soil &amp; water conservation Department, Aurangabad</b>						
	RWCO, S&WC Dept, Aurangabad				1. Nanda MI Tank		

**Table 2.3****List of dams inspected by Dam Safety Organisation, Nashik**

Officers from Dam Safety Organisation Nashik have inspected following dams from 01/01/2019 to 31/03/2020 and inspection notes have been issued to concerned field officers.

Sr.No.	Name of Dam	Category	Date of Inspection
1	2	3	4
<b>National Important Dams -</b>			
1	Jayakwadi	I	10/10/2019
2	Isapur	I	28/1/2020
<b>Class-I Dams</b>			
3	Majalgaon	I	17/9/2019
4	Loni Sawangi HL Barrage	I	11/10/2019
5	Rajatakli HL Barrage	I	11/10/2019
6	Mangrul HL Barrage	I	11/10/2019
7	Jogladevi HL Barrage	I	11/10/2019
<b>Class-II Dams</b>			
8	Dhamna	II	9/7/2019
9	Ajanta Andhari	II	9/7/2019
10	Saraswati	II	17/9/2019
11	Nagzari	II	18/9/2019
12	Mawalgaon	II	18/9/2019
13	Kekatsindagi	II	18/9/2019
14	Rawankol	II	18/9/2019
15	Malhipparga	II	18/9/2019
16	Dongargaon	II	18/9/2019
17	Dongarkonali	II	18/9/2019
18	Chandegaon	II	18/9/2019
19	Ambehole	II	19/9/2019
20	Dhoksal	II	7/1/2020
21	Jivrekha	II	8/1/2020
22	Bharaj	II	8/1/2020
23	Konad	II	8/1/2020
24	Tintraj	II	22/1/2020
25	Morphali	II	23/1/2020
26	Sakud-2	II	23/1/2020
27	Sarfarajpur	II	23/1/2020
28	Surnerwadi	II	23/1/2020
29	Ghordari	II	27/1/2020

Sr.No.	Name of Dam	Category	Date of Inspection
1	2	3	4
30	Nagzari (Kinwat)	II	29/1/2020
31	Pimpalgaon (Kinwat)	II	29/1/2020
32	Renapur Sudha	II	29/1/2020
33	Undri Manjri	II	30/1/2020
34	Jahur	II	30/1/2020
35	Pethwadaj	II	30/1/2020
<b>Class-III</b>			
36	Yellori	III	19/9/2019
37	Dapegaon	III	19/9/2019
<b>Private Dams -</b>			
<b>Class-II</b>			
38	Banshelki	II	18/9/2019
39	Ghanewadi	II	7/1/2020
40	Kham	II	8/1/2020
41	Harsul	II	8/1/2020

**Table 2.4****Circle wise no. of large dams where deficiencies are noticed**

Sr. No	Name of Circle	Total No.of Dams			Large Dams Class-I			Large Dams Class-II		
		Class-I	Class-II	Total	Def. Cat-1	Def. Cat-2	Def. Cat-3	Def. Cat-1	Def. Cat-2	Def. Cat-3
1	2	3	4	5	6	7	8	9	10	11
<b>[1] C.E., CADA, Aurangabad</b>										
(1)	CADA Aurangabad	9	44	53	0	0	8	0	10	25
(2)	CADA BEED	14	148	162	0	1	3	0	15	130
<b>[2] CE, WR,Aurangabad</b>										
(1)	B.I.P.C., Parali(V)	1	8	9	0	0	1	0	1	7
(2)	A.I.C., Aurangabad	1	11	12	0	1	1	0	0	11
(3)	N.I.C, Nanded	12	32	44	0	3	9	0	1	30
<b>[3] UPPER COMMISSIONER &amp; CHIEF ENGINEER, REGIONAL SOIL AND WATER CONSERVATION , PUNE</b>										
<b>Regional water conservation officer, Soil &amp; water conservation Department, Aurangabad C.E, SSI, Pune</b>										
(1)	RWCO, S&WC Dept, Aurangabad	0	2	2	0	0	0	0	0	2
	<b>Total</b>	<b>37</b>	<b>245</b>	<b>282</b>	<b>0</b>	<b>5</b>	<b>22</b>	<b>0</b>	<b>27</b>	<b>205</b>
<b>Private</b>										
(1)	Private Dams	0	4	4	0	0	0	0	4	0
	<b>Grand Total</b>	<b>37</b>	<b>249</b>	<b>286</b>	<b>0</b>	<b>5</b>	<b>22</b>	<b>0</b>	<b>31</b>	<b>205</b>

**Table 2.5**

**Damwise number of Category-2 deficiencies noticed**

<b>Sr. No</b>	<b>Name of Dam</b>	<b>No. of deficiencies noticed</b>
<b>1</b>	<b>2</b>	<b>3</b>
	<b>Class-I Dams</b>	
	<b>[1] C.E., (CADA) AURANGABAD</b>	
	<b>(1) SE, ( CADA) , BEED</b>	
1	Manjra	04
	<b>[2] C.E., (WR), AURANGABAD</b>	
	<b>(1) S.E.,N.I.C.,Nanded</b>	
2	Lower Manar	02
3	Yeldari	05
4	Siddheshwar	02
5	Shivna Takali	06
	<b>Class-II Dams</b>	
	<b>[1] C.E., (CADA) AURANGABAD</b>	
	<b>(1) SE, (CADA), AURANGABAD</b>	
6	Dhoksal	06
7	Dhamna	03
8	Kalyan Girija	02
9	Soygaon	03
10	Banoti	04
11	Ambadi	03
12	Kaldari	03
13	Nimbhora	02
14	Sanjul	05
15	Ajantha Andhari	04
	<b>(2) SE, (CADA), BEED</b>	
16	Anandwadi (ST)	04
17	Kendrewadi	02
18	Halad Wadhona	03
19	Sonala (ST)	03
20	Halli (Kh)	04
21	Tiru	01
22	Bindusara	02
23	Lokarwadi	05
24	Kasari	04
25	Limbachiwadi-1	03
26	Limbachiwadi-2	03
27	Dethewadi	03
28	Tintraj	04
29	Sindgaon (ST)	01
30	Kunsawali (ST)	02
	<b>[2] C.E., (WR) AURANGABAD</b>	
	<b>(1) SE, NIC, NANDED</b>	
31	Palaiguda	02
	<b>(2) SE, BIPC, PARALI (V)</b>	
32	Ghonshi	03

Sr. No	Name of Dam	No. of deficiencies noticed
1	2	3
<b>Private Dams</b>		
<b>[3] Aurangabad Municipal Corporation, Aurangabad</b>		
22	Kham	03
23	Harsul	03
<b>[4] Jalna Nagar Parishad, Jalna</b>		
24	Ghanewadi	05
<b>[5] Udgir Nagar Parishad, Udgir, Dist. Latur</b>		
25	Banshelki	03

**Table 2.6**

**Damwise Health status report of Class-I dams with category-1 deficiency**

<b>Sr. No.</b>	<b>Dam Features</b>	<b>Date of Inspection</b>	<b>Inspecting Officer</b>	<b>Main Component of Dam</b>	<b>Observation / Significant Deficiencies noticed</b>	<b>Remedial Measures Suggested</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<p>----- No Such Dams under this category is reported -----</p>						



**Table 2.7**  
**Damwise Health status report of Class-I dams with category-2 deficiency**

Sr. No	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
<b>[1] CE, CADA, Aurangabad</b> <b>(1) SE, CADA, BEED</b> <b>(a) Ex.Engr., Latur Irrigation Division-I, Latur</b>						
1.	Name :- <b>MANJRA</b> Year of completion :- 1980 Location :- Longitude :- 76° 15' 00" Latitude :- 18° 55' 00" Height :- 30 m Gross capacity :- 22.40 Mm <sup>3</sup> Design Spillway capacity :- 8370 Cumecs S.N. in National regi. of large Dams 2009 :- MH09MH1585	16/5/2019 23/11/2019	<b>Smt.S.N.Jagtap</b> <b>Shri. R.B.Karpe,</b> <b>S.E&amp; Adm.,CADA</b> <b>Beed</b>	Foundation          Body Wall Spillway Structural performance	Considerable leaching from the seepage water and deposition of lime near the seepage exit spots. (A12) Leakage through guide wall is observed. (A15)  Emergency gate or wire rope, guide tees are rusted.  Gates end Arm holes are missing. Gates both side wire rope rusted. Gates hoists and gear train covers are very heavy to open & close. (A18)	Leaching material should be tested from MERI, Nashik & repair work should be taken in hand accordingly.  Necessary repairs should be carried out to stop the seepage.  Repairs should be carried out.  { Repairs should be carried out with the help of Mechanical organization
<b>[2] CE, (WR), Aurangabad</b> <b>(1) SE, NIC, NANDED</b> <b>(a) Ex.Engr., NID (South), Nanded</b>						
2.	Name :- <b>LOWER MANAR</b> Year of completion :- 1964 Location :- Longitude :- 76° 45' 00" Latitude :- 19° 4' 30" Height :- 27 m Gross capacity :-139 Mm <sup>3</sup> Design Spillway capacity :- 8778 Cmcfs Sr. No. in National Register Of large Dams -MH09MH0170	NA 13/11/2019	<b>Shri.S.K.Sabbinwar</b> <b>S.E.,N I.C, Nanded</b>	W.W.Bar & TC    Outlet	Scouring is observed at spillway D/s chainage 110-240 m. (A7)  Conduit is not structurally sound and not reasonably leak proof. (A4)	Repairs at the scoured section section should be carried out.  Amount and exact location of leakage should be ascertained and necessary repairs should be carried out.

Sr. No	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
<b>(b) Ex.Engr., PID, Basmatnagar Dist.Hingoli</b>						
3.	<b>Name :- YELDARI</b> Year of completion :- 1962 Location : - Longitude :- 76° 45' 00" Latitude :- 19° 4' 30" Height :- 51.23 m Gross capacity :-934.440 Mm3 Design Spillway capacity :- 10477 Cmechs Sr. No. in National Register Of large Dams - MH09HH0171	20/5/2019 4/11/2019	<b>Shri.S.K.Sabbinwar S.E.,N I.C, Nanded</b>	Relief Wells  Foundation        Body Wall   End weir	Relief wells @ch. 299.90, 303.10, 305.00, 306, 306.50, 307.00, 308.50 are not in good condition.(A5) Repairing to lighting arrangement of Drainage Gallery is essential.(A8)  Seepage water spring is observed above 50% capacity on Left flank of NOF @ Ch.40 & 60 m and level @ 450 & 200 and 451.500 m (A1)  Sweating observed on D/s face of dam. (A11)  End weir is not accessible. Scouring below end weir is noticed. Standing pool of water on d/s of end weir. (A17)	Relief well should be surged & cleaned periodically.  Adequate LED lighting with water proofing PVC pipe casing should be provided.  Location of spring with reference to the water level in dam & gallery should be monitored. Necessary repairs should be carried out.  Location & causes of sweating should be examined & necessary repairs should be carried out by using water proofing compound. Access to end weir should be provided. Necessary repairs to stop scouring should be carried out. Dewatering should be carried out.
4.	<b>Name :- SIDDHESHWAR</b> Year of completion :- 1968 Location : - Longitude :- 75° 05' 30" Latitude :- 19° 0' 20" Height :- 38.10 m Gross capacity :-250.85 Mm3 Design Spillway capacity :- 10789 Cmechs Sr. No. in National Register Of large Dams MH09HH0172	20/5/2019 25/11/2019	<b>Shri.S.K.Sabbinwar S.E.,N I.C, Nanded</b>	Earthen Dam D/s Drainage   Spillway gates	Standing pool of water is observed in the d/s of the dam. (A2)  All wire ropes need to be altered/replaced. (A18)	The D/S area of W. W. bar at least up to 200m, from bar shall be free from standing pool. Dewatering should also be carried out  All wire ropes needs to be replaced / repaired with the help of Mechanical Organisation.

Sr. No	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
<b>[2] CE, (WR), Aurangabad</b> <b>(1) SE, AIC, Aurangabad</b> <b>(a) Ex.Engr., MID-1, Aurangabad</b>						
5.	Name :- <b>SHIVANA TAKLI</b> Year of completion :- 2005 Location :- Longitude :- 75° 05' 30" Latitude :- 20° 07' 52" Height :- 20.40 m Gross capacity :- 39.36 Mm3 Design Spillway capacity :- 3271 Cumecs Sr. No. in National regi. Of large Dams 2009:- <b>MH09MH1651</b>	12/5/2019 11/12/2019	<b>Shri.M.S.Surve</b> <b>S.E.,AIC, Aurangabad</b>	U/S Slope  Crest of dam  Gallery  Spillway  Spillway gates  Outlet gates	Dam section is not as per design section (B1)  Crest profile is not as per proper elevation. (B1)  Heavy leakages in right and left side of gallery. Electrification is damaged. (A8,A10)  Sweating is seen on spillway. (A11)  Rubber seals shows sign of weathering need to be repaired (B12)  Operation of outlet gates are not smooth (B5)	Restore the dam section as per design section.  Restore the crest profile as per design section.  Dewatering shall be done .Reason for heavy leakages shall be find out and leakages should be reduced by providing proper treatment.  Necessary remedial measures should be carried out.  Rubber seals should be repaired or replaced.  Necessary repairs should be carried out with the help of Mechanical Organisation.

**Table 2.8**

**Damwise Health status report of Class-I dams with category-3 deficiency**

Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection Pre & Post	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11	12
[1] Chief Engineer (CADA), Aurangabad											
(1) CADA, Aurangabad											
(a) JID, Nathnagar (North), Paithan											
1	Paithan (Jayakwadi)	1976	75° 20'00" 19° 30'00"	41.30	2909.00	18153.0	MH09HH0597	Gated	25/4/2019 NA 10/10/2019	3.5,,3.2,3.33,3.36,3.21,3.28,3.20,3.31,3.34,3.30,3.6	11
2	Mangrul H.L.Barrage	2012	75°58'30" 19°18'30"	5.00	25	6186	MH09MH2127	Gated	11/10/2019	3.26,3.11,3.20,3.3,3.7,3.21,3.6,3.27	08
3	Rajatakli H.L.Barrage		76°1'54" 19°16'54"	15.10	25	9386	MH09MH2128	Gated	11/10/2019	3.26,3.11,3.20,3.3,3.7,3.21,3.6,3.27	08
4	Jogladevi H.L.Barrage	2012	75°54'39" 19°13'14"	15.715	10	4092	MH09MH2125	Gated	11/10/2019	3.26,3.11,3.20,3.3,3.7,3.21,3.6,3.27	08
5	Loni Savangi H.L.Barrage		76°11'30" 19°16'48"	18.602	29.98	10159	MH09MH2126	Gated	11/10/2019	3.26,3.11,3.20,3.3,3.7,3.21,3.6,3.27	08
(b) NMID, Vaijapur											
6	Bor dahegaon	1999	75° 59'00" 18° 55'00"	16.70	13.40	511	MH09MH1491	Gated	30/4/2019 NA	3.24,3.28,3.7,3.9,3.25,3.17,3.2,3.5,3.20,3.31,3.16,3.34,3.30	13
7	Narangi	1998	74°43'00" 19° 56'00"	14.00	13.293	1296	MH09MH1490	Gated	30/4/2019 NA	3.24,3.28,3.9,3.5,3.25,3.2,3.1,3.20,3.31,3.6,3.21,3.16,3.30	13
(C) JID, Jalna											
8	Lower Dudhna	2010	76° 24' 00" 19° 30'00"	27.25	344.80	3600	MH09MH2089	Gated	19/4/2019 NA	3.24,3.28,3.20,3.9,3.1,3.7,3.5,3.2,3.11,3.13,3.33,3.18,3.31,3.23,3.30,3.34	16

Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection Pre & Post	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11	12
<b>(2) CADA, Beed</b>											
<b>(a) MID, Parali (V)</b>											
9	Majalgaon	1986	73° 26' 30" 16° 16' 00"	31.05	4540	15500	MH09HH1174	Gated	3/5/2019 22/11/2019 17/9/2019	3.24, 3.6, 3.21, 3.9, 3.20, 3.25,3.36, 3.13, 3.2, 3.31, 3.18, 3.30,3.5	13
<b>(b) LID-1, Latur</b>											
10	Lower Terna	1989	76° 25' 45" 18° 01' 00"	26.10	121.188	9120	MH09MH1228	Gated	25/5/2019 7/11/2019	3.24, 3.28, 3.13, 3.9,3.7,3.11,3.31,3.21,3.18,3.30, 3.27,3.6	12
11	Manjra	1980	76° 15' 00" 18° 55' 00"	30	22.40	8370	MH09MH1585	Gated	16/5/2019 23/11/2019	3.24, 3.7, 3.10, 3.9, 3.13, 3.36, 3.20, 3.11, 3.21, 3.16, 3.18, 3.28, 3.23, 3.30, 3.6,3.1,3.22,3.27	18
12	Masalga	1994	76° 43'30" 18° 42'52"	12.39	14.67	3009	MH09HH1408	Gated	16/5/2019 7/11/2019	3.24, 3.2, 3.20, 3.6, 3.7, 3.18, 3.16, 3.28,3.22,3.33,3.30	11

Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection Pre & Post	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11	12
<b>[2] Chief Engineer (WR), Aurangabad</b>											
<b>(1) Aurangabad Irrigation Circle, Aurangabad</b>											
<b>(a) MID-1, Aurangabad</b>											
13	Shivna takli	2005	75° 05'30" 20° 07'52"	20.40	39.36	3271	MH09MH1651	Gated	12/5/2019 NA	3.1,3.6,3.16,3.2,3.11,3.26,3.9,3.33,3.25,3.18,3.13,3.36,3.19,3.20,3.21,3.31	16
<b>(2) Nanded Irrigation Circle, Nanded</b>											
<b>(a) NID, South, Nanded</b>											
14	Lower Manar	1964	76° 45' 00" 19° 4' 30"	27	139	8778	MH09MH0170	Gated	NA 13/11/2019	3.1,3.28,3.24, 3.30,3.21	05
15	Balegaon HL Barrage	2015	77° 34' 33" 18°57' 14"	29.34	42.50	8795	MH09MH2117	Gated	24/4/2019 26/11/2019	3.24, 3.20, 3.31, 3.28, 3.18, 3.19, 3.16,3.30	08
<b>(b) NID, North, Nanded</b>											
16	Upper manar	2009	72° 02' 00" 18° 47' 00"	30.90	107.98	5774	MH09HH1806	Gated	2/4/2019 21/11/2019	3.24, 3.9, 3.10, 3.25, 3.19, 3.13, 3.36,3.12,3.28,3.18,3.16,3.34,3.20,3.31,3.30	15
17	Vishnupuri	1990	76° 41' 00" 19° 17' 00"	31.00	83.55	8483	MH09LH1254	Gated	25/4/2019 13/11/2019	3.24, 3.28, 3.20, 3.18, 3.16, 3.30	06
18	Digras H.L. Barrage	2010	76° 29' 30" 19° 05'20"	11.00	63.85	14474	MH09HH2116	Gated	24/5/2019 12/12/2019	3.24, 3.20, 3.18, 3.16, 3.6, 3.30	06
19	Babhali H.L. Barrage	2012	77° 46' 46" 18°51'13"	29.76	3.47	5986.74	MH09MH2118	Gated	8/3/2019 25/11/2019	3.24, 3.20, 3.18, 3.6, 3.30, 3.31, 3.28	07
20	Amdura H.L. Barrage	2011		25.395	23.71	20349.15	MH09HH2119	Gated	22/5/2019 16/12/2019	3.24,3.20,3.31,3.28,3.18,3.17, 3.30	07
<b>(c) UPPD-1, Nanded</b>											
21	Isapur (UPP)	1982	77° 27' 00" 19° 43'00"	58.00	1254	9400	MH09HH0947	Gated	21/5/2019 30/11/2019 28/1/2020	3.24,3.9,3.13,3.25,3.17,3.27,3.1, 3.36,3.12,3.16,3.19,3.6,3.20, 3.18,3.33,3.30,3.2,3.4	18
<b>(d) PID, Basmatnagar</b>											
22	Yeldari	1962	76° 45' 00" 19° 4' 30"	51.23	934.440	10477	MH09HH0171	Gated	20/5/2019 4/11/2019	3.9,3.25,3.2,3.11,3.36,3.10,3.13, 3.5,3.1,3.12,3.19,3.20,3.31,3.18, 3.34,3.22,3.6,3.30	18
Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection Pre & Post	Deficiencies noticed	Total Deficiencies

1	2	3	4	5	6	7	8	9	10	11	12
23	Siddheshwar	1968	75° 05' 30" 19° 0' 20"	38.10	250.85	10789	MH09HH0172	Gated	20/5/2019 25/11/2019	3.33,3.7,3.9,3.10,3.25,3.2,3.1,3.11,3.20,3.26,3.31,3.28,3.27,3.18,3.16,3.32,3.23,3.30,3.6	19
<b>(e) MID, Parbhani</b>											
24	Mudgal HL Barrage	2012		19	11.87	4293.25	MH09MH2121	Gated	4/4/2019 10/12/2019	3.24,3.31,3.27,3.20,3.18,3.19,3.30	07
25	Dhalegaon HL Barrage	2012		16.5	14.87	8774	MH09MH2129	Gated	7/6/2019 10/12/2019	3.24,3.31,3.28,3.27,3.20,3.18,3.30	07
<b>(3) BIPC, Paral (V)</b>											
<b>(b) BID, Beed</b>											
26	Upper Kundalika	2016	76°01'00" 18°56'00"	24.28	18.77	3353.52	Proposed to be included in NRLD	Gated	NA	3.9,3.20,3.28	03

**Table 2.9**

Damwise Health status report of Class-II dams with category-1 deficiency

Sr. No	Name of Dam	Year of Completion	Location	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr. No. in NRLD Register	Date of Inspection	Inspecting Officer
1	2	3	4	5	6	7	8	9	10
<p>----- No Such Dams under this category is reported -----</p>									



**Table 2.10**  
Damwise Health status report of Class-II dams with category-2 deficiency

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
<b>[1] Chief Engineer, (CADA), Aurangabad</b> <b>(1) CADA, Aurangabad</b> <b>(a) Jalna Irrigation Division, Jalna</b>						
1	Name : <b>DHOKSAL</b> Date of completion :1964 Location : Longitude : 75° 21' 00" Latitude : 20° 44' 00" Gross Capacity :10.73 Mm3 Height : 17.70 m. Design spillway Capacity 219 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0755</b>	10/5/2019 NA  7/1/2020	<b>Shri.P.B.Jadhav</b> <b>EE, JID, Jalna</b>  <b>Shri.P.H.Mohite,</b> <b>EE, DSO-3,Nashik</b>	Earthen embankment  W.W. Bar. & T/C.	E/W and pitching required for full length (B3)  W.W. Masonry of body wall is heavily disturbed. Leakage extent to 2 to 3 cusecs noticed. (B7)  Coping damaged through full length of w.w. bar.(B7)  Apron is fully disturbed. (A14)  EDA heavily damaged.(A14)  .Scouring to d/s is observed. (A7)	Pitching should be provided.  Necessary repairs should be carried out. Necessary treatment in the affected area shall be carried out to stop/minimize leakage.  Coping work should be carried out to full length of w.w. bar.  Necessary repairs should be carried out.  Necessary repairs should be carried out.  Provide necessary work / arrangement to prevent scouring.
2	Name : <b>DHAMNA</b> Date of completion :1974-75 Location : Longitude : 76 ° 50' 00" Latitude : 20 ° 27'00" Gross Capacity : 10.72 Mm3 Height : 13.45 m. Design spillway Capacity - 1388 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09LH0450</b>	12/5/2019 NA  9/7/2019	<b>Shri.P.B.Jadhav</b> <b>Ex.Engr., JID, Jalna</b>  <b>Shri.P.H.Mohite,</b> <b>EE, DSO-3,Nashik</b>	Earthen Embankment  W.W Bar & T.C..	Relief wells not functioning properly. (A5)  Leakage to the tune of 1 cusecs observed. Pointing disturbed.(B7)  Scouring is noticed at TC (A7)	Necessary repairs should be carried out for proper functioning of relief wells..  Necessary repairs should be carried out to stop the leakages & provide pointing.  Necessary repairs should be carried out to stop scouring .
Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested

1	2	3	4	5	6	7
3	Name : <b>KALYAN GIRIJA</b> Date of completion :1972 Location : Longitude : 76 ° 10' 40" Latitude : 19 ° 50' 00" Gross Capacity : 10.16 Mm3 Height : 22.07 m. Design spillway Capacity - 1310 m3/sec. Sr No in National Register of Large Dams 2009 : MH09MH310	14/5/2019 NA	Shri.P.B.Jadhav Ex.Engr., JID, Jalna	W.W Bar & T.C..	Excessive leakages are observed through masonry as well as foundation of w.w. bar. (B7)  Scouring is noticed due to heavy leage through w.w. bar. (B7)	Necessary repairs should be carried out to stop leakages.  Necessary repairs should be carried out to stop scouring
<b>(b) Aurangabad Irrigation Division, Aurangabad</b>						
4	Name : <b>SOYEGAON</b> Date of completion : 1967 Location : Longitude : 75°35'00' Latitude : 20°33'00" Gross Capacity : 2.54 Mm3 Height : 17.50m. Design spillway Capacity 480 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0148</b>	16/5/2019 NA	Shri.P.C.Dabhire Ex.Engr., AID, Aurangabad	Outlet  W.W.Bar & TC	Outlet gate does not open/close smoothly. (B5)  Stilling basin is damaged slightly. (A14)  Guide bund is damaged at some portion (A16)	Necessary repairs should be carried out.  Necessary repairs should be carried out.  Necessary repairs should be carried out.
5	Name : <b>BANOTI</b> Date of completion : 1968 Location : Longitude : 75°20'00' Latitude : 19°56'50" Gross Capacity : 3.22 Mm3 Height : 19.50m. Design spillway Capacity 525 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0165</b>	16/5/2019 NA	Shri.P.C.Dabhire Ex.Engr., AID, Aurangabad	Outlet  W.W.Bar & TC	Outlet well & gate are damaged and needs complete renovation (A6)  Masonry of w.w. bar is not in good condition.. (B7)  Heavy leakages noticed near spillway bar in masonry flank wall. (A15)  Retrogression/scouring is noticed in tail channel. (A7)	Necessary repairs should be carried out with the help of Mechanical Organisation.  Necessary repairs should be carried out  Necessary repairs should be carried out to stop the leakages.  Necessary repairs should be carried out

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
6	Name : <b>AMBADI</b> Date of completion : 1975 Location : Longitude : 75°6'00" Latitude : 20°56'00" Gross Capacity : 12 Mm3 Height : 20 m. Design spillway Capacity 1412 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0737</b>	29/5/2019 NA	Shri.P.C. Dabhire Ex.Engr., AID, Aurangabad	Earthen Embankment       W.W Bar & T.C..	Settlement observed at RD 700 to 1200 m (B3)  Standing pool of water are seen on d/s of dam at RD 100 m (A2)  Retrogression / scouring is noticed on d/s of bar at 1.5 m deep and 3 m long. (A7)	Restore the dam section to design section.  Necessary repairs should be carried out  Provide necessary work / arrangement to prevent scouring.
7	Name : <b>KALDARI</b> Date of completion : 2000 Location : Longitude : 75°15' 30" Latitude : 20°29'00" Gross Capacity : 30.90 Mm3 Height : 17.70m. Design spillway Capacity 360 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0880</b>	16/5/2019 NA	Shri.P.C. Dabhire Ex.Engr., AID, Aurangabad	Earthen Embankment       W.W Bar & T.C..	Dam is under section throughout the length. (B1)  Guide wall is damaged due to heavy flood. (A16)  Leakages observed through masonry components. (B7)	Restore the dam section to design section.  Necessary arrangements to guide the flood should be provided.  Necessary arrangements to stop leakage should be provided.
8	Name : <b>NIMBHORA</b> Date of completion : 1981 Location : Longitude : 75°12'00" Latitude : 20°19'00" Gross Capacity :1.56 Mm3 Height : 17.60m. Design spillway Capacity 211 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0897</b>	1/6/2019 NA	Shri.P.C. Dabhire Ex.Engr., AID, Aurangabad	Outlet       W.W.Bar & TC	Outlet well not in good condition, u/s masonry collapsed. (A6)  Spillway bar is not in good condition. (B7)	Necessary repairs should be carried out  Necessary repairs should be carried out

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
9	Name : <b>SANJUL</b> Date of completion : 1967 Location : Longitude : 75°25'00" Latitude : 20°07'00" Gross Capacity : 3.08 Mm3 Height : 210m. Design spillway Capacity 542 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0149</b>	1/6/2019 NA	Shri.P.C. Dabhire Ex.Engr., AID, Aurangabad	Earthen Embankment  Outlet       W.W Bar & T.C..	Crest profile not at proper elevation. (B1)  Outlet gate not functioning properly. Unusual noise noticed. (B5)  Outlet well is silted up and damaged. Well is closed by blocking stones. (A6)  W.W.bar is not in good condition.Cracks in the masonry and holes to d/s are noticed. (B7)  Right side guide bund is damaged. (A7)	Restore the dam section to design section.  Necessary repairs should be carried out with the help of Mechanical organisation.  Necessary repairs should be carried out  Necessary repairs should be carried out  Necessary repairs should be carried out
10	Name : <b>AJANTA ANDHARI</b> Date of completion : 1982 Location : Longitude : 75°46'00" Latitude : 20°31'00" Gross Capacity :7.53 Mm3 Height : 21 m. Design spillway Capacity 781 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0941</b>	9/7/2019	Shri. P.H.Mohite Ex.Engr., DSO-3, Nashik	Earthen Embankment  Outlet      W.W. bar & TC	Sand boiling noticed at Ch.550 m in toe drain area. (A1)  Junction of embankment and outlet well is not intact. (A16)  A pit having approx. diameter 1 m having ht. 1.25 m is noticed.  Leakage through foundation of w.w. bar is observed. (B7)	Necessary repairs to stop boling should be carried out immediately.  Necessary repairs should be carried out  To stop leakage, RCC jacketing to W.W. bar should be provided.

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
<b>(2) CADA, Beed</b>						
<b>(a) Latur Irrigation Division-2, Latur</b>						
11	Name :- <b>ANANDWADI (ST)</b> Date of completion :- 2002 Longitude :- 76° 49' 15" Latitude :- 18° 22' 30" Height :- 18.80 m Gross capacity :- 2.026 Mm <sup>3</sup> Design Spillway capacity :- 256.84 m <sup>3</sup> /sec. Sr. No. in National regi. Of large Dams 2009 :- <b>MH09MH1607</b>	2/4/2019 30/1/2019	Smt. <b>R.D.Thombre, EE,LID-2, Latur</b>	Earthen Embankment  W.W Bar & T.C..	Settlement of 0.50 to 0.60 m observed between Ch.150 to 210 m. (B3) Scouring at D/s side of w.w. bar up to foundation level noticed (A7) Damages observed at guide wall/divide wall needs repairs at ch. 27 to 40 m & 48 to 73 m. (A16) Retrogression/scouring in tail channel noticed. (A7)	Restore the dam section to designed section.  Provide necessary work / arrangement to prevent scouring.  Appropriate measures or repairs should be carried out.  Overburdens should be removed to make the effective flow of water in tail channel
12	Name :- <b>KENDREWADI</b> Date of completion :- 2013 Longitude :- 76°44'15" Latitude :- 18°37'00" Height :- 15.80m Gross capacity :- 2.258Mm <sup>3</sup> Design Spillway capacity :- 305.344 m <sup>3</sup> /sec. Sr. No. in National regi. Of large Dams 2009 :- <b>MH09MH2278</b>	2/4/2019 6/11/2019	Smt. <b>R.D.Thombare, EE,LID-2, Latur</b>	W.W Bar & T.C.	Guide bund is washed out / damaged and the material is spread out in nearby field & river portion (A16)  Right side guide bund damaged due to heavy rain in 9/2016	Appropriate measures or repairs should be carried out.  Necessary repairs should be carried out.
13	Name :- <b>HALAD WADHONA (ST)</b> Date of completion :- 2001 Longitude :- 77°13'55" Latitude :- 18°36'35" Height :- 19.15m Gross capacity :- 3.693 Mm <sup>3</sup> Design Spillway capacity :- 442.28 m <sup>3</sup> /sec. Sr. No. in National regi. Of large Dams 2009 :- <b>MH09LH1510</b>	11/4/2019 12/12/2019	Smt. <b>R.D.Thomabare, EE,LID-2, Latur</b>	W.W.Bar & TC	32 m long and 0.90 m in height of w.w. bar not constructed.(B7)  Guide wall is broken in 4 patches and protection bund in 10 m length (A16)  Guide bund is broken in some patches. (A16)	Balance work should be completed immediately.  Necessary repairs should be carried out.  Necessary repairs should be carried out.

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
14	Name :- <b>SONALA(ST)</b> Date of completion :- 2006 Longitude :- 77°08'10" Latitude :- 18°35'16" Height :- 16.3m Gross capacity :- 5.491Mm <sup>3</sup> Design Spillway capacity :- 1119 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- <b>MH09MH2289</b>	4/4/2019 12/12/2019	Smt. <b>R.D.Thombare, EE,LID-2, Latur</b>	Earthen Embankment  W.W.Bar & TC	Few quantity of Standing water observed at junction of guide wall & embankment noticed. (A2)  Scouring at D/s side of w.w. bar up to foundation level noticed (A7)  At Ch.50 to 150 m, guide divide wall is damaged. (A16)	Leakage should be located, monitored & necessary repair work should be carried out to prevent leakages.  Provide necessary work / arrangement to prevent scouring.  Appropriate measures or repairs should be carried out.
15	Name :- <b>HALLI (KH)</b> Date of completion :- 2008 Longitude :- 76°51'30" Latitude :- 18°08'00" Height :- 21.00m Gross capacity :- 1.467Mm <sup>3</sup> Design Spillway capacity :- 138.854 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- <b>MH09MH2274</b>	2/4/2019 6/11/2019	Smt. <b>R.D.Thombare, EE,LID-2, Latur</b>	W.W.Bar & TC	Scouring on d/s side of bar. (A7)  EDA is not in good condition (A14)  Guide bund is totally washed away (A16)  Retrogression / souring in tail channel noticed. (A7)	Provide necessary work / arrangement to prevent scouring.  Necessary repairs should be carried out.  Necessary repairs / reconstruction of guide wall should be carried out.  Overburdens should be removed to make the effective flow of water in tail channel
16	Name :- <b>TIRU</b> Date of completion :- 1976 Longitude :- 77°04'06" Latitude :- 18°25'22" Height :- 21.00m Gross capacity :- 23.32Mm <sup>3</sup> Design Spillway capacity :- 1994 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- <b>MH09MH0595</b>	4/4/2019 3/12/2019	Smt. <b>R.D.Thombare, EE,LID-2, Latur</b>	W.W.Bar & TC	Automatic gates - 71 nos. are not operated automatically and not working properly. (A20)	Repairs to automatic gates should be carried out with the help of Mechanical Organisation.

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
<b>(b) Jayakwadi Irrigation Division-3, Beed</b>						
17	Name :- <b>BINDUSURA</b> Date of completion :- 1955 Location :- Longitude :- 75° 44' 30" Latitude :- 18° 45' 45" Height :- 18.00 m Gross capacity :- 9.57Mm <sup>3</sup> Design Spillway capacity :- 1654 m <sup>3</sup> /sec. Sr. No. in National regi. Of large Dams 2009 :- <b>MH09MH0072</b>	1/5/2019 1/11/2019	<b>Shri.R.B.Karpe</b> <b>Ex.Engr., JID-3, Beed</b>	E/DAM  W.W. Bar. & T/C.	There is standing pool of water at ch. 371 m. (A2)  Masonry of Spillway bar damaged in some portion. There is leakage in some portion. (B7)	The D/S area of W. W. bar at least up to 200m, from bar shall be free from standing pool. Dewatering should also be carried out.  Masonry of Spillway bar should be repaired. Repair work to prevent leakages should be carried out.
18	Name :- <b>LOKARWADI</b> Date of completion :- 2001 Location :- Longitude :- 75° 54' 00" Latitude :- 18° 54' 00" Height :- 23.91 m Gross capacity :- 2.23 Mm <sup>3</sup> Design Spillway capacity :- 341 m <sup>3</sup> /sec. Sr. No. in National regi. Of large Dams 2009:- -- <b>MH09MH2280</b>	7/5/2019 12/11/2019	<b>Shri.R.B.Karpe</b> <b>Ex.Engr., JID-3, Beed</b>	E / Dam.  Outlet  W.W. Bar. & T/C.	There are standing pool of water observed at d/s of gorge portion at nalla level. (A2)  Leakage is observed at nalla level (Discharge 0.25 cusecs) (A3)  Leakage through gate observed (o.30 cusecs) (B12)  Leakage through H.R and E/W joint (B5)  Leakages through d/s of w.w. bar in tail channel from direction of wing wall & w.w. body wall joint observed. (B7)	The D/S area of W. W. bar at least up to 200m, from bar shall be free from standing pool. Dewatering should also be carried out.  Necessary repairs should be carried out to prevent leakages.  Necessary repairs should be carried out to prevent leakages.  Provide necessary arrangement to prevent standing leakage at joint of HR & E/W.  Necessary repairs should be carried out to prevent leakages.

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
<b>( c ) Majalgaon Irrigation Division, Parali (V), Dist. Beed</b>						
<b>19</b>	Name :- <b>KASARI</b> Date of completion :- 1988 Location :- Longitude :- 75° 04' 30" Latitude :- 18° 45' 00" Height :- 15.52 m Gross capacity :- 0.872 Mm <sup>3</sup> Design Spillway capacity :- 142.80 m <sup>3</sup> /sec. Sr. No. in National regi. Of large Dams 2009 :- <b>MH09MH0854</b>	13/5/2019 22/11/2019  13/7/2019	<b>Shri.D.H.Shinde</b> <b>Ex.Engr.</b> <b>Maj.Irr.Dn., Parali (V), Beed</b>  <b>Deputy Engineer</b>	Earthen Embankment  Outlet  Outlet	Leakage through casing zone. (A1)  Outlet well not in good condition (A6)  Outlet well is collapsed.(A6)  Leakages through junction of outlet well & embankment (A3)	Necessary arrangement should be provided to stop leakage.  Necessary repairs should be carried out.  Necessary repairs should be carried out.  Necessary arrangement should be provided to stop leakage.
<b>20</b>	Name :- <b>LIMBACHIWADI-1</b> Date of completion :- 2005 Location :- Longitude :- 76° 5' 2" Latitude :- 18° 50' 58" Height :- 20.08 m Gross capacity :- 1.414 Mm <sup>3</sup> Design Spillway capacity :- 273 m <sup>3</sup> /sec. Sr. No. in National regi. Of large Dams 2009 :- <b>MH09MH2087</b>	11/5/2019 7/11/2019  13/7/2019	<b>Shri.R.B.Karpe</b> <b>Ex.Engr.,</b> <b>Maj.Irr.Dn., Parali (V), Beed</b> <b>Deputy Engineer</b>	Earthen Embankment  W.W. bar & TC	Leakage through earthen embankment (A1)  Leakage through foundation and masonry of w.w. bar.(B7) Leakage through guide wall (3.16)	Necessary arrangement should be provided to stop leakage.  Necessary arrangement should be provided to stop leakage.  Necessary arrangement should be provided to stop leakage.
<b>21</b>	Name :- <b>LIMBACHIWADI-2</b> Date of completion :- 2006 Location :- Longitude :- 76° 06' 03" Latitude :- 18° 04' 41" Height :- 17.95 m Gross capacity :- 1.40 Mm <sup>3</sup> Design Spillway capacity :- 661.50 m <sup>3</sup> /sec. Sr. No. in National regi. Of large Dams 2009 :- <b>MH09MH2088</b>	11/5/2019 7/11/2019  13/7/2019	<b>Shri.R.B.Karpe</b> <b>Ex.Engr.,</b> <b>Maj.Irr.Dn., Parali (V), Beed</b> <b>Deputy Engineer</b>	Earthen Embankment  W.W. bar & TC	Minor Leakage through earthen embankment at middle portion (A1)  Leakage through foundation and masonry of w.w. bar. (B7) Guide wall is collapsed. (3.16)	Necessary arrangement should be provided to stop leakage.  Necessary arrangement should be provided to stop leakage.  Necessary repairs should be carried out



Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
22	Name :- <b>DETHEWADI</b> Date of completion :- 2005 Location :- Longitude :- 75° 58' 51" Latitude :- 18° 52' 48" Height :- 21.88 m Gross capacity :- 1.409 Mm <sup>3</sup> Design Spillway capacity :- 236.80 m <sup>3</sup> /sec. Sr. No. in National regi. Of large Dams 2009 :- <b>MH09MH1649</b>	11/5/2019 7/11/2019 12/7/2019	<b>Shri.R.B.Karpe</b> <b>Ex.Engr.,</b> <b>Maj.Irr.Dn., Parali (V), Beed</b> <b>Deputy Engineer</b>	Earthen Embankment Outlet W.W. bar & TC	Leakage through earthen embankment (A1) Leakage through junction of outlet & embankment.(A3) Leakage through foundation of w.w. bar. (B7) W.W. bar damaged (B7)	
<b>(d) Osmanabad Irrigation Division-1, Osmanabad</b>						
23	Name : <b>TINTRAJ</b> Date of completion :1985 Location : Longitude : 75° 31' 00" Latitude : 18° 36' 00" Gross Capacity: 1.393 Mm <sup>3</sup> Height : 15.55 m. Design spillway Capacity 429.76m <sup>3</sup> /sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH093</b>	22/1/2020	<b>Shri.P.H.Mohite,</b> <b>Ex.Engr., DSD-3,</b> <b>Nashik</b>	E/dam Outlet W.W.Bar & TC	Longitudinal cracks observed from Ch.260 to 280 m (B4) Outlet well is not in good condition.(A6) Heavy damages to tail channel & apron was noticed. (A7,A14)	Necessary repairs should be carried out. Necessary repairs should be carried out. Necessary repairs should be carried out

Sr. No	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
<b>(d) Osmanabad Irrigation Division-2, Osmanabad</b>						
<b>24</b>	Name : <b>SINDGAON ST</b> Date of completion :1997 Location : Longitude : 76° 08' 00" Latitude : 17° 50' 00" Gross Capacity: 3.282Mm3 Height : 16.3m. Design spillway Capacity 318 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH1631</b>	27/5/2019 27/11/2019	<b>Shri.A.N.Madane</b> <b>Ex.Engr., OID-2,</b> <b>Omerga</b>	Outlet	Outlet well is totally damaged. All the assembly of outlet well and gate is in collapsed condition. (A6)	Necessary repairs should be carried out. with the help of mechanical organisation.
<b>25</b>	Name : <b>KUNSAWALI ST</b> Date of completion :1998 Location : Longitude : 74° 50' 00" Latitude : 18° 45' 00" Gross Capacity: 1.165 Mm3 Height : 15.04 m. Design spillway Capacity 113.08 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0107</b>	27/5/2019 27/11/2019	<b>Shri.A.N.Madane</b> <b>Ex.Engr., OID-2,</b> <b>Omerga</b>	Outlet  W.W.Bar & TC	Cavity of embankment near outlet well noticed. (B3)  W.W. bar is damaged at several places & masonry is exposed. Pointing & coping damaged. (B7)	Necessary repairs should be carried out.  Necessary repairs should be carried out.



**Table 2.11**

Damwise Health status report of Class-II dams with category-3 deficiency

Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Date of Inspection	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11
<b>[1] CHIEF ENGINEER, CADA, AURANGABAD.</b> <b>(1) CADA, AURANGABAD.</b> <b>(a) JALNA IRRIGATION DIVISION , JALNA</b>										
1	Galhati	1964	75°21'00" 20°44'00"	17.70	10.73	219	MH09MH0755	13/5/2019 NA	3.5, 3.21	02
2	Dhoksal	1964	75°21'00" 20°44'00"	17.70	10.73	219	MH09MH0755	10/5/2019 NA 7/1/2020	3.2,3.34,3.21,3.1,3.5,3.7,3.9	07
3	Kalyan Pir	1986	75°02'00" 19°51'00"	16.41	15.36	1315	MH09MH1138	14/5/2019 NA	3.5,3.2,3.16	03
4	Upper Dudhna	1964	75°42'00" 19° 54' 00"	18.00	12.36	1912	MH09MH0099	14/5/2019 NA	3.5,3.9,3.21	03
5	Jivrekha	1964	75°58'00" 20°51'00"	20.00	7.00	1083	MH09MH0097	13/5/2019 NA 8/1/2020	3.5,3.2,3.21,3.1,3.2,3.7,3.9	07
6	Kalyan Girja	1972	76°109'40" 19°50'00"	22.07	10.16	1310	MH09MH0312	14/5/2019 NA	3.5,3.1,3.21	03
7	Jui	1960	75°46'00" 20°20'00"	15.00	9.00	1643	MH09MH0082	12/5/2019 NA	3.2,3.21,3.20	03
8	Bharaj	1964	76°06'00" 20°19'00"	15.46	2.32	355	MH09MH0928	12/5/2019 NA 8/1/2020	3.5,3.7,3.2,3.21,3.1,3.5	06
9	Pimparkhedda	1966	76°22'30" 19°43'00"	15.20	1.54	194	MH09MH0120	10/5/2019 NA	3.5,3.34,3.21	03
10	Konad	1994	76°10'00" 20°16'00"	16.16	4.03	620	MH09MH0352	12/5/2019 NA 8/1/2020	3.5, 3.2,3.9,3.21,3.1,3.7,3.35	07
11	Dhamna	1974	76°50'20" 20°27'00"	13.45	10.72	1388	MH09LH0450	12/5/2019 9/7/2019	3.2,3.34,3.21,3.16,3.5,3.1,3.9	07

Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Date of Inspection	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11
<b>(b) AURANGABAD IRRIGATION DIVISION , AURANGABAD.</b>										
12	Ajanta Andhari	1982	75°46'00" 20°31'00"	21.00	7.53	781	MH09MH0941	2/7/2019 NA 9/7/2019	3.13,3.5,3.1,3.2,3.9,3.21	06
13	Devhari (Soygaon)	1987	78°36'00" 19°36'00"	15.60	1.907	256	MH09MH2072	16/5/2019 NA	3.5,3.7,3.9,3.22,3.34,3.21	06
14	Gadadgad	1970	75°13'00" 20°14'00"	21.00	5.49	885	MH09MH0222	29/5/2019 NA	3.34,3.21	02
15	Kelgaon	1973	75°40'00" 20°24'00"	16.15	2.13	396	MH09MH0364	2/7/2019 NA	3.5,3.2,3.13,3.34,3.21	05
16	Khelna	1964	75°40'00" 20°24'00"	21.00	15.00	1318	MH09MH0098	2/7/2019 NA	3.5,3.9,3.13	03
17	Lahuki	1978	75°34'00" 19°54'30"	17.00	5.68	963	MH09MH0733	10/5/2019 NA	3.10,3.34	02
18	Nimbhora	1981	75°12'00" 20°19'00"	17.60	1.56	211	MH09MH0897	1/6/2019 NA	3.5,3.7,3.2,3.21	04
19	Varthan	1972	75°23'00" 20°30'00"	15.50	1.57	210	MH09MH0279	16/5/2019 NA	3.1,3.9,3.34,3.21,3.35	05
20	Waghdara	1975	75°56'00" 20°54'30"	15.00	3.47	454	MH09MH0507	1/6/2019 NA	3.2,3.9,3.34	03
21	Ajanta Palashi	1999	75°19'00" 20°17'00"	19.40	15.55	1167	MH09MH1519	29/5/2019 NA	3.2	01
22	Purna Neopur	1998	75°19'40" 20°23'00"	16.60	11.38	1184	MH09MH1484	29/5/2019 NA	3.5,3.22,3.19	03
23	Loni (Kannad)	1988	75°14'45" 20°09'25"	16.00	0.860	114	MH09MH1185	4/7/2019 NA	3.5,3.9,3.21,3.19	04
24	Chapner	1973	76°03'00" 20°09'00"	21.00	1.96	251	MH09MH0352	1/6/2019 NA	3.5,3.2,3.22,3.34,3.21	05
25	Ambadi	1975	75°06'00" 20°56'00"	20.00	12.00	1412	MH09MH0737	29/5/2019 NA	3.34	01

Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Date of Inspection	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11
26	Nirgudi	1967	75°14'45" 20°09'25"	19.35	2.43	405	MH09MH0145	4/7/2019 NA	3.5,3.9,3.2,3.21	04
27	Dheku	1960	74°50'00" 20°7'00"	20.00	1.40	1945	MH09MH0083	1/6/2019 NA	3.2,3.9,3.21	03
28	Kesapuri	1975	75°12'06" 19°56'50"	16.71	1.721	814.43	MH09MH0291	4/7/2019 NA	3.2,3.34,3.21	03
29	Sanjul	1967	75°25'00" 20°07'00"	21.00	3.08	542	MH09MH0149	1/6/2019 NA	3.34,3.21	02
30	Kaldari	2000	75°15'30" 20°29'00"	17.70	3.90	360	MH09MH0880	26/5/2019 NA	3.2,3.34,3.7	03
31	Soyegaon	1967	75°35'00" 20°33'00"	17.50	2.54	480	MH09MH0148	16/5/2019 NA	3.7	01
32	Banoti	1968	75°20'00" 19°56'00"	19.69	3.88	535.07	MH09MH0165	16/5/2019 NA	NIL	--
33	Sukhna	1966	75°31'00" 19°49'00"	16.92	21.35	1745	MH09MH0168	31/5/2019 NA	3.5,3.7,3.10,3.34	04
34	Girija	1986	75° 20'15" 20° 06'00"	19.10	24.500	1620	MH09MH1139	1/6/2019 NA	3.5,3.1,3.9,3.34,3.21	05
35	Pardari ST	2006	75° 24'30" 19°47'00"	22.34	2.26	337	MH09MH2287	10/5/2019 NA	3.2,3.10	02
<b>( c ) JAYAKWADI IRRIGATION DIVISION-2, PARBHANI</b>										
36	Masoli	1981	76°45'05" 18°54'10"	24.84	34.08	2038	MH09MH0903	3/5/2019 26/12/2019	3.5, 3.34	02
37	Padali	1981	76°19'30" 18°37'45"	15.00	2.91	326	MH09MH0875	9/5/2019 28/11/2019	3.7,3.34,3.21	03
38	Bhoshi	1972	76°57'00" 18°51'00"	16.60	2.22	435	MH09MH1046	NA 28/11/2019	3.7,3.2,3.9,3.34,3.21,3.35,3.19,3.6	08
39	Tandulwadi	1972	76°57'00" 18°51'00"	16.60	2.22	453	MH09MH0300	3/5/2019 26/12/2019	3.5,3.9,3.7,3.21	04
40	Karpara	1975.	76°38'02" 17°30'42"	16.60	27.32	2033	MH09MH0531	NA 28/11/2019	3.7,3.34,3.21,3.9	04

Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Date of Inspection	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11
<b>(2) CADA, BEED</b>										
<b>(a) LATUR IRRIGATION DIVISION-2, LATUR</b>										
41	Anandwadi	2002	76°49'15" 18°22'30"	18.80	2.026	256.84	MH09MH1607	2/4/2019 30/11/2019	3.5, 3.10, 3.9, 3.13	04
42	Kendrewadi	2013	76°44'15" 18°37'00"	15.80	2.258	305.344	MH09MH2278	2/4/2019 6/11/2019	3.5, 3.9, 3.13	03
43	Halad Wadhona	2001	77°13'55" 18°36'35"	19.15	3.693	442.28	MH09LH1510	11/4/2019 12/12/2019	3.10, 3.9, 3.2, 3.13	04
44	Sonala	2006	77°08'10" 18°35'16"	16.3	5.491	1119	MH09MH2289	4/4/2019 12/12/2019	3.5, 3.10, 3.9, 3.2, 3.13	05
45	Halli (Kh)	2008	76°51'30" 18°08'00"	21.00	1.467	138.854	MH09MH2274	2/4/2019 6/11/2019	3.5, 3.9, 3.13, 3.16	04
46	Sakol	1992	76°14'00" 18°18'00"	17.50	12.689	1153	MH09MH1297	20/4/2019 2/12/2019	3.5, 3.9, 3.7, 3.13, 3.34, 3.21	06
47	Andhori (ST)	2006	76°47'10" 18°46'00"	17.00	2.1624	192.98	MH09MH2267	12/4/2019 4/12/2019	3.10, 3.9, 3.2, 3.13, 3.34	05
48	Devarjan	1993	77°00'00" 18°19'00"	15.20	12.411	1135.36	MH09MH1317	1/6/2019 28/11/2019	3.10, 3.9, 3.7, 3.13, 3.22, 3.34, 3.21, 3.20	08
49	Kodali (ST)	2004	77°13'10" 18°28'15"	18.96	1.72	165.05	MH09MH2279	10/4/2019 11/12/2019	3.9, 3.13	02
50	Tiru	1976	77°04'06" 18°25'22"	21.00	23.32	1994	MH09MH0595	4/4/2019 3/12/2019	3.5, 3.10, 3.9, 3.2, 3.13, 3.21	06
51	Gharani	1996	76°49'15" 18°22'30"	16.76	22.08	2248	MH09MH0194	20/4/2019 2/12/2019	3.10, 3.9, 3.2, 3.13, 3.34, 3.21	06
52	Bhutekarwadi	1967	76°51'00" 18°37'00"	16.50	3.31	593	MH09MH0150	21/4/2019 6/1/2019	3.5, 3.10, 3.9, 3.13	04
53	Ekurka	1973	77°04'00" 18°29'00"	15.15	1.64	191	MH09MH0342	9/4/2019 3/12/2019	3.7, 3.10, 3.9, 3.13, 3.34, 3.21	06
54	Gotala	1971	76°52'39" 18°38'00"	15.63	3.43	336	MH09MH0252	21/4/2019 6/11/2019	3.5, 3.10, 3.9, 3.2, 3.13	05
55	Mogha	1990	77°00'00" 18°43'00"	16.90	7.89	1049	MH09MH1247	15/4/2019 30/11/2019	3.7, 3.1, 3.10, 3.9, 3.2, 3.13, 3.34, 3.21, 3.20, 3.16	10
56	Sukhani	1995	76°43'00" 18°40'00"	16.82	1.21	192	MH09MH0834	18/5/2019 15/11/2019	3.5, 3.1, 3.10, 3.9, 3.20, 3.7, 3.13, 3.34	08
57	Yester	2002	76°48'00" 18°46'00"	15.05	2.162	565.81	MH09MH1561	12/4/2019 4/12/2019	3.10, 3.9, 3.2, 3.7, 3.13, 3.34, 3.21, 3.16	08
58	Thodga	1995	76°32'30" 18°42'30"	18.83	5.63	688	MH09MH1401	15/4/2019 30/1/2019	3.10, 3.2, 3.7, 3.9, 3.21, 3.16, 3.17, 3.34, 3.13, 3.22, 3.20	11

Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Date of Inspection	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11
59	Pimpri	1974	76°07'65" 18°15'30"	16.50	2.20	1203	MH09MH0425	9/4/2019 11/12/2019	3.7, 3.10, 3.9, 3.2, 3.13, 3.22, 3.21	07
60	Fattu Naik Tanda (ST)	2007	74°47'00" 18°35'00"	19.5	1.368	118.58	MH09MH2271	3/4/2019 30/11/2019	3.5, 3.9, 3.13, 3.16, 3.19	05
61	Yeldari	2002	76°50'00" 18°49'00"	19.80	1.32	122	MH09MH1601	12/4/2019 4/12/2019	3.5, 3.7, 3.10, 3.1, 3.2, 3.9, 3.13, 3.22, 3.34, 3.21, 3.16	11
62	Sangamwadi	2010	76°59'26" 18°29'00"	20.02	8.554	964	MH09MH2102	22/5/2019 3/12/2019	3.10, 3.9, 3.2, 3.13, 3.22	05
63	Karepur	2004	75°06'00" 20°56'00"	20.00	12.00	1412	MH09MH0737	18/5/2019 15/11/2019	3.5, 3.10, 3.13	03
64	Borol	2006	77°05'55" 18°05'00"	17.41	3.51	325.11	MH09MH2427	1/6/2019 28/11/2019	3.10, 3.5, 3.9, 3.2, 3.7, 3.13	06
65	Bokani	1992	77°01'00" 18°527'00"	17.03	9.45	1258	MH09MH1337	1/6/2019 28/11/2019	3.10, 3.9, 3.2, 3.13, 3.34	05
66	Guredhal MI Tank	1998	77°23'30" 18°35'15"	20.70	3.77	580	MH09MH1489	9/4/2019 11/12/2019	3.7, 3.10, 3.2, 3.9, 3.13, 3.34, 3.21	07
67	Nagthana	1993	76°49'45" 18°37'46"	19.31	6.48	961	MH09MH1316	21/4/2019 6/11/2019	3.5, 3.10, 3.9, 3.2, 3.13, 3.22, 3.21	07
68	Bothi	1978	77°40'00" 19°05'00"	19.15	1.82	175	MH09MH0860	22/5/2019 3/12/2019	3.5, 3.10, 3.2, 3.9, 3.13, 3.21, 3.20	07
69	Gutti no.1	2005	77°12'00" 18°30'00"	16.71	3.08	553.08	MH09MH1652	11/12/2019	3.10, 3.9, 3.2, 3.13	04
70	Gutti ST-2	2009	77°15'00" 18°32'00"	16.69	2.413	142.214	MH09MH2272	23/4/2019 11/12/2019	3.10, 3.9, 3.13	03
71	Kaudgaon	2003	77°51'45" 18°35'15"	15.30	2.29	375	MH09MH1581	4/4/2019 6/11/2019	3.5, 3.10, 3.9, 3.2, 3.13	05
72	Whati	1980	76° 44' 00" 18° 39' 00"	17.30	9.51	997	MH09MH0840	21/4/2019 3/11/2019	3.5, 3.10, 3.9, 3.13, 3.19, 3.21	06
73	Nagzari (ST)	2011	76° 55' 30" NA	17.33	1.458	127.28	MH09MH1057	30/11/2019 18/9/2019	3.5, 3.10, 3.2, 3.1	04
74	Mandurki (ST)	2008	76° 18' 00" 18° 30' 00"	20.40	1.332	596.7	MH09MH2282	22/5/2019 3/12/2019	3.1, 3.10, 3.9, 3.2, 3.13	05
75	Mavalgaon (ST)	2010	77° 10' 30" 18° 41' 45"	15.1	1.15	103.1	MH09MH2283	4/12/2019 18/9/2019	3.5, 3.10, 3.13, 3.2, 3.1, 3.9	06



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1	2	3	4	5	6	7	8	9	10	11
76	Khandli (ST)	2006	76° 52' 00" 18° 50' 00"	22.08	85.254	300	MH09MH2428	21/5/2019 30/11/2019	3.5, 3.10, 3.9, 3.16,3.19	05
77	Kawalwadi (ST)	2008	76° 47' 00" 18° 46' 00"	17.00	2.1624	192.98	MH09MH2276	12/4/2019 4/12/2019	3.5, 3.7, 3.10, 3.9, 3.16, 3.13	06
78	Rachanwadi	1996	77°40'00" 19°50'00"	19.54	5.327	772.47	MH09LH1405	22/5/2019 3/12/2019	3.2, 3.9, 3.21, 3.13,3.34	05
79	Kalegaon	2008	77°12'30" 18°43'30"	18.17	9.61	1158	MH09MH2080	15/5/2019 30/11/2019	3.5, 3.10, 3.9, 3.2, 3.13, 3.16	06
80	Dhorsangvi	1979	76°49'15" 18°22'30"	15.30	2.24	370.5	MH09MH0777	11/4/2019 12/12/2019	3.10, 3.9, 3.2,3.13,3.16	05
81	Molvan	2010	76°45'30" 18°46'00"	18.60	1.02	103.11	MH09MH2094	12/4/2019 4/12/2019	3.5, 3.10, 3.9, 3.13, 3.21	05
82	Dongargaon (ST)	2008	77°12'00" 18°34'00"	18.96	3.967	439.767	MH09MH1093	12/12/2019 18/9/2019	3.10, 3.2, 3.13,3.1,3.5,3.7,3.9	07
83	Chandegaon (ST)	2014	77°13'00" 18°24'06"	19.00	4.5287	762.87	MH09MH2268	11/12/2019 18/9/2019	3.10, 3.13,3.1,3.2,3.9,3.33,	06
84	Nideban (ST)	2006	77°08'30" 18°22'400"	24.07	1.520	180.74	MH09MH2285	9/4/2019 11/12/2019	3.10, 3.9, 3.7, 3.13	04
85	Doul Hipparga (MI)	2005	77°30'00" 18°15'00"	17.05	4.06	873.67	MH09MH2270	10/4/2019 3/12/2019	3.10, 3.9, 3.2, 3.13	04
86	Malihipparga (ST)	2012	77°14'00" 18°13'00"	21.40	4.075	819.62	MH09MH2281	12/12/2019 18/9/2019	3.10, 3.2, 3.13, 3.16,3.1,3.7	06
87	Ravankola (ST)	2011	77°14'00" 18°36'00"	15.46	1.272	117.07	MH09MH2288	12/12/2019 18/9/2019	3.10, 3.2, 3.13, 3.1,3.5,3.9	06
88	Dhondwadi (ST)	2005	77°11'00" 18°32'40"	16.53	1.059	127.47	MH09MH2269	23/4/2019 11/12/2019	3.10, 3.9, 3.2, 3.13	04
89	KekatSindagi (ST)	2012	70°10'45" 18°4'45"	15.50	1.634	137.98	MH09MH2277	12/12/2019 18/9/2019	3.10, 3.9, 3.2, 3.13, 3.16,3.1,3.5	07
90	Hagdul-Gudal (ST)	2006	76°00'00" 18°45'00"	15.5	2.817	882.42	MH09MH2273	15/5/2019 30/11/2019	3.10, 3.13	02
91	Renapur	2000	76°35'00" 18°35'00"	10.02	21.69	1993.21	MH09MH1555	7/11/2019	3.5, 3.7, 3.10, 3.9, 3.2, 3.16	06

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1	2	3	4	5	6	7	8	9	10	11
<b>(b) JAYAKWADI IRRIGATION DIVISION NO. 3 BEED</b>										
92	Belpara	1993	75°09'30" 19°09'30"	17.40	6.99	1278	MH09MH1314	2/5/2019 24/11/2019	3.7, 3.2	02
93	Shivani	1978	75°50'30" 18°56'00"	17.14	2.68	462	MH09MH0719	11/5/2019 1/11/2019	3.2, 3.34, 3.21, 3.16	04
94	Nagthawadi	1981	75°56'00" 19°00'15"	15.81	0.82	288	MH09MH0872	18/5/2019 28/11/2019	3.5, 3.9, 3.2, 3.22	04
95	Warni	1981	75°23'00" 19°03'30"	15.34	1.92	445	MH09MH0887	2/5/2019 24/11/2019	3.9	01
96	Karchundi	2007	75°41'20" 18°53'27"	20.75	2.90	552	MH09MH2081	14/5/2019 13/11/2019	NIL	00
97	Nimgaon Choba	2000	75°30'00" 18°36'00"	14.67	7.51	2329	MH09MH1557	18/5/2019 28/11/2019	3.2, 3.9, 3.34, 3.21	04
98	Suleman Deola	2006	75°1'40" 13°0'30"	19.41	2.280	NA	MH09MH2290	12/5/2019 26/11/2019	3.9, 3.2	02
99	Khatkali	1978	75°45'45" 18°52'45"	18.90	2.27	372	MH09MH0710	1/5/2019 1/11/2019	3.7, 3.2	02
100	Mahasangavi	1965	75°28'00" 18°48'00"	16.98	9.45	136	MH09MH0103	9/5/2019 9/11/2019	3.22, 3.34	02
101	Mankarnika	1997	75°58'50" 19°05'00"	15.25	11.38	1321.04	MH09MH1447	7/5/2019 12/11/2019	3.5, 3.7, 3.2, 3.22, 3.34	05
102	Narayangad	1995	75°45'00" 19°05'30"	16.57	5.286	1044	MH09MH1377	2/5/2019 9/11/2019	3.7, 3.9, 3.34	03
103	Uthala	1992	75°52'00" 19°06'00"	16.28	8.17	1041	MH09MH1296	2/5/2019 1/11/2019	3.7, 3.2, 3.22	03
104	Kadi	1970	75°05'24" 18°58'30"	21.18	7.633	1156	MH09MH0225	9/5/2019 26/11/2019	3.34	01
105	Kambli	1958	75°30'00" 18°16'00"	15.20	3.80	1359	MH09MH0079	12/5/2019 26/11/2019	3.9, 3.10, 3.2	03
106	Mehakari	1966	75°00'00" 18°52'00"	27.63	16.135	2233	MH09MH0132	9/5/2019 26/11/2019	3.5, 3.2, 3.9	03

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1	2	3	4	5	6	7	8	9	10	11
107	Rameshwar Sautada	2000	75°18'42" 18°48'45"	17.50	3.28	896	MH09MH1550	8/5/2019 9/11/2019	3.2	01
108	Welturi	1979	75°02'30" 15°04'00"	20.50	1.78	435	MH09MH0783	12/5/2019 18/5/2019	3.9, 3.2, 3.22, 3.34	04
109	Matkuli	1989	75°15'30" 18°47'15"	15.39	1.758	447.54	MH09MH1436	18/5/2019 26/11/2019	3.2, 3.34	02
110	Wanjarwadi	1961	75°38'00" 18°58'00"	15.03	2.89	1867	MH09MH0087	2/5/2019 1/11/2019	3.2, 3.9, 3.34, 3.21	04
111	Golangiri	1987	75°38'00" 18°44'100"	15.52	1.893	436	MH09MH1162	14/5/2019 13/11/2019	3.7, 3.2, 3.34, 3.21	04
112	Incharna	1971	75°07'00" 18°12'00"	15.29	2.63	527	MH09MH0262	2/5/2019 9/11/2019	3.2, 3.10, 3.22, 3.21	04
113	Dokewada (ST)	1976	75°44'30" 18°55'30"	23.20	8.92	1136	MH09MH2074	1/5/2019 20/11/2019	3.2, 3.20	02
114	Bhayala-II	2007	75°37'07" 18°32'08"	26.70	1.84	379.48	MH09MH2068	14/5/2019 9/11/2019	3.9, 3.2, 3.16, 3.6	04
115	Morzalwadi	1993	77°25'18" 18°56'29"	15.70	1.473	530	MH09MH1295	2/5/2019 9/11/2019	3.9	01
116	Sindphana	1963	75°23'00" 19°00'00"	19.05	12.593	1857	MH09MH0092	8/5/2019 1/11/2019	3.10, 3.22	02
117	Bindusara	1955	75°44'30" 18°45'45"	18.00	9.57	1654	MH09MH0072	1/5/2019 1/11/2019	3.5, 3.17, 3.21, 3.35	04
118	Rooty	1958	75°30'00" 18°16'16"	15.20	3.80	1359	MH09MH0055	9/5/2019 26/11/2019	NIL	00
119	Lokarwadi		75°54'00" 18°54'00"	23.91	2.23	341	MH09MH2280	7/5/2019 12/11/2019	NIL	00
120	Domri	1996	75° 34'00" 18° 54'00"	23.10	11.21	1243	MH09MH1409	2/5/2019 1/11/2019	3.2	01
121	Kada	1965	75° 26' 00" 18° 56'00"	15.45	9.95	1554	MH09MH0111	9/5/2019 26/11/2019	3.34, 3.21	02
122	Brahmagaon	1978	75° 11'30" 18° 48'00"	15.80	1.66	384.50	MH09MH0708	12/5/2019 28/11/2019	3.9	01

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1	2	3	4	5	6	7	8	9	10	11
<b>(c) MAJALGAON IRRIGATION DIVISION, PARALI(V), BEED.</b>										
123	Bhodegaon	1971	76°20'00" 19°30'00"	17.10	4.24	751	MH09MH0265	2/5/2019 15/11/2019	3.2, 3.34, 3.21	03
124	Daithana	2002	76°39'57" 18°48'10"	16.99	1.65	270	MH09MH1603	22/5/2019 31/10/2019	3.2	01
125	Borna	1983	76°36'30" 18°15'30"	22.30	10.908	1249	MH09MH1005	22/5/2019 31/10/2019	3.5, 3.22, 3.21, 3.16	04
126	Chandpur	1969	76° 33' 00" 18°48' 00"	23.89	3.01	412	MH09MH0186	22/5/2019 31/10/2019	3.5, 3.19, 3.2	03
127	Karewadi	1978	75°30'00" 18°48'00"	22.96	1.58	403	MH09MH0714	2/5/2019 15/11/2019	3.2, 3.34, 3.33	03
128	Kanherwadi	1978	76°30'00" 18°48'00"	18.04	3.29	403.22	MH09MH0713	22/5/2019 23/11/2019	3.5, 3.9, 3.2	03
129	Kalwati	2001	76°24'00" 18°48'00"	16.98	4.95	136	MH09MH1571	17/5/2019 31/10/2019	3.7, 3.9, 3.2	03
130	Nilkanteshwar	2001	76°19'36" 18°16'25"	19.08	1.96	1.96	MH09MH1596	17/5/2019 31/10/2019	3.7	01
131	Jiwachwadi	2005	76°00'45" 18°05'20"	20.35	1.41	199.95	MH09MH2275	11/5/2019 22/11/2019	3.2, 3.9	02
132	Limbachiwadi-I	2005	76° 5' 2" 18°50' 58"	20.08	1.414	273	MH09MH2087	1/5/2019 7/11/2019	3.2, 3.9, 3.16, 3.19	04
133	Limbachiwadi-2	2006	76°06'03" 18°04'41"	17.95	1.40	661.50	MH09MH2088	1/5/2019 7/11/2019	3.2, 3.9, 3.16, 3.19	04
134	Dethewadi	2005	75°58'51" 18°52'48"	21.88	1.409	236.80	MH09MH1649	11/5/2019 7/11/2019	3.7, 3.9, 3.16, 3.19	04
135	Chardari	2000	76°02'30" 18°52'30"	22.82	1.51	417.64	MH09MH1583	22/5/2019 31/10/2019	3.10, 3.9, 3.22, 3.16, 3.19	05
136	Dharur (ST)	1981	75°05'31" 18°49'05"	20.24	1.49	185.44	MH09MH1573	13/5/2019 31/5/2019	3.9	01
137	Ghagarwada	2005	76°54' 00" 18°50' 48"	25.35	2.78	385.35	MH09MH1592	13/5/2019 7/11/2019	3.2, 3.34, 3.16, 3.21	04
138	Chanai	2006	76°19'09" 18°44'47"	16.48	0.603	64	MH09MH1661	17/5/2019 29/10/2019	3.5, 3.9, 3.2	03

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1	2	3	4	5	6	7	8	9	10	11
139	Bhavathana	2005	76°17'29" 18°48'33"	25.76	5.27	553	MH09MH1653	17/5/2019 29/10/2019	3.9	01
140	Sakud	2001	76° 27' 00" 18° 44' 47"	16.48	0.603	64	MH09MH1661	---- 29/11/2019	3.7,3.9	02
141	Kasari	1988	75° 04' 30" 18° 45' 00"	15.52	0.872	142.80	MH09MH0854	13/5/2019 22/11/2019	3.21	01
142	Karanja	2002	76°39'57" 18°48'10"	16.99	1.65	270	MH09MH0249	9/5/2019 29/10/2019	3.2, 3.9,3.34,3.21	04
143	Chikalbeed	2005	76°17'29" 18°48'33"	25.76	5.27	553	MH09MH1653	13/5/2019 15/11/2019	3.2	01
144	Wan	1966	76°25'00" 18°52'00"	19.00	2.51	2340	MH09MH0133	2/5/2019 23/11/2019	3.10	01
145	Babulgaon	1975	76°13'00" 18°59'00"	15.60	2.74	340	MH09MH0774	6/5/2019 22/11/2019	3.2, 3.34, 3.21	03
146	Bhogalwadi	2002	76° 10' 00" 18° 16' 00"	16.68	1.94	493.38	MH09MH1370	6/5/2019 15/11/2019	3.2, 3.34, 3.21	03
147	Gunwati	1995	76°20'15" 18°37'15"	15.82	6.616	922.20	MH09MH1364	6/5/2019 15/11/2019	3.9	01
148	Saraswati	1981	76°16'10" 18°35'00"	18.30	NA	7.23	MH09MH0865	6/5/2019 15/11/2019 17/9/2019	3.5,3.9,3.34,3.21,3.2,3.1,3.22,3.6	08
149	Kundalika	1981	76°08'00" 18°56'30"	28.45	46.34	2751	MH09MH1140	6/5/2019 22/11/2019	3.2, 3.22,3.9	03
150	Khanapur	1978	76°21'30" 19°21'30"	20.40	2.77	383	MH09MH0712	6/5/2019 22/11/2019	3.2, 3.9, 3.34	03
<b>(d) OSMANABAD IRRIGATION DIVISION-1, OSMANABAD</b>										
151	Chandani	1965	75°32'00" 18°15'00"	17.18	20.7	3030	MH09MH0114	10/5/2019 17/10/2019	3.9, 3.5, 3.13, 3.34, 3.21, 3.20,3.10,3.22	08
152	Terna	1970	76°07'30" 18°19'49"	15.00	22.91	2487	MH09MH0232	4/5/2019 23/10/2019	3.7, 3.2, 3.19,3.20	04
153	Ramganga	1977	75°37'00" 18°31'00"	21.01	6.136	1305	MH09MH0650	14/5/2019 22/10/2019	3.2, 3.9, 3.13, 3.34, 3.21	05
154	Sangameshwar	2005	75°37'00" 18°37'00"	15.25	16.82	2473.99	MH09MH1381	10/5/2019 31/10/2019	3.10, 3.7, 3.9, 3.2, 3.13, 3.22, 3.34, 3.21	08
155	Khandeshwar	1978	75°25'00" 18°30'00"	17.14	10.84	800	MH09MH0730	10/5/2019 17/10/2019	3.20	01

Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Date of Inspection	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11
156	Sakat	1997	75°44'00" 18°28'00"	19.80	14.43	1686	MH09MH1339	10/5/2019 17/10/2019	3.1, 3.7, 3.9, 3.13, 3.20, 3.34, 3.21, 3.20,	08
157	Gaosud	1995	76°2'00" 18°7'25"	16.75	1.700	198.78	MH09MH1354	4/5/2019 18/10/2019	3.7, 3.10, 3.2, 3.9, 3.13, 3.34, 3.21, 3.20,3.16	09
158	Raghuchiwadi	1975	76°10'00" 18°09'00"	16.75	2.07	354	MH09MH0576	4/5/2019 18/10/2019	3.7, 3.10, 3.9, 3.2, 3.13, 3.34, 3.21, 3.20	08
159	Ambehole ST	2011	76°02'00" 18°12'00"	20.45	4.15	105.19	MH09MH2266	18/10/2019 19/9/2019	3.5,3.9, 3.2, 3.13,3.10,3.1	06
160	Wadgi	1998	75°59'10" 18°27'00"	18.84	2.39	319.5	MH09MH1464	4/5/2019 19/10/2019	3.7,3.9,3.2,3.10,3.22,3.21,3.20	07
161	Yermala	1997	75°52'00" 18°23'00"	15.72	1.41	133.73	MH09MH1459	4/5/2019 19/10/2019	3.2	01
162	Malkapur	1995	75°59'00" 18°28'00"	22.80	0.945	84.52	MH09MH1375	4/5/2019 19/10/2019	3.2,3.13	02
163	Arsoli LMI Tank	1990	75°28'00" 18°19'00"	23.30	7.718	976	MH09MH1246	14/5/2019 31/10/2019	3.2, 3.9, 3.13, 3.34, 3.20	05
164	Jamb	2000	75°34'00" 18°31'00"	17.30	2.824	302.71	MH09MH1539	14/5/2019 31/10/2019	3.7, 3.2, 3.9	03
165	Wakwad	1996	75°42'00" 18°33'10"	16.80	0.998	163	MH09MH1390	14/5/2019 31/10/2019	3.9, 3.20, 3.13	03
166	Watephal	2000	75°24'45" 18°28'10"	15.06	4.266	628.21	MH09MH1545	10/5/2019 31/10/2019	3.10, 3.7, 3.2	03
167	Tintraj	1985	75°31'00" 18°36'00"	15.55	1.393	429.76	MH09MH093	10/5/2019 31/10/2019 22/1/2020	3.5,3.2, 3.9,3.19,3.1,3.21	06
168	Chorkhali	1996	75° 54' 00" 18° 20' 00"	20.28	3.434	291	MH09MH1363	4/5/2019 19/10/2019	3.2, 3.13, 3.22, 3.19	04
169	Banganga	1975	75°40'00" 18°29'00"	19.20	5.935	826	MH09MH0522	14/5/2019 22/10/2019	3.5,3.9,3.1,3,3.21,3.20	05
170	Khasapur	1956	75°30'00" 18°17'00"	23.78	13.590	906	MH09MH0076	10/5/2019 17/10/2019	3.7,3.10,3.34,3.21,3.20	05

Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Date of Inspection	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11
<b>(e) OSMANABAD IRRIGATION DIVISION-2, OMERGA</b>										
171	Diggi	1997	76°41'10" 17°03'10"	15.16	1.598	201.61	MH09MH1429	21/5/2019 25/11/2019	3.5,3.7,3.9,3.2,3.34,3.21	06
172	Kurnoor	1968	75°16'00" 17°50'00"	23.70	35.24	2190	MH09MH0169	16/5/2019 23/11/2019	3.5,3.1,3.2,3.9,3.34,3.21,3.33	07
173	Turori	1983	76°41'30" 17°48'00"	17.50	7.66	1096	MH09MH1004	21/5/2019 25/11/2019	3.5, 3.9, 3.34	03
174	Harni	1965	76°06'00" 17°49'00"	16.55	13.58	1647	MH09MH0112	16/5/2019 23/11/2019	3.1,3.10,3.34	03
175	Sindgaon	1997	76°08'00" 17°50'00"	16.3	3.282	318	MH09MH1631	27/5/2019 27/11/2019	3.5, 3.1, 3.2,3.9,3.21,3.19,3.16	07
176	Khandala	1973	76°10'00" 17°47'00"	20.50	6.26	978	MH09MH0381	16/5/2019 23/11/2019	3.5,3.1,3.2,3.9,3.34	04
177	Nandgaon	1998	75°40'00" 18°25'00"	22.91	1.99	565	MH09MH1469	27/5/2019 27/11/2019	3.5,3.1,3.2,3.9,3.34	05
178	Kunsawali	1998	74°50'00" 18°45'00"	15.04	1.165	113.08	MH09MH0107	27/5/2019 27/11/2019	3.5,3.1,3.7,3.2,3.9,3.22,3.34,3.21	08
179	Aliyabad ST	2004	76°50'00" 17°58'00"	19.50	1.709	170.114	MH09MH2423	16/5/2019 27/11/2019	3.5,3.1,3.2,3.9,3.34,3.21	06
180	Salgara (D) ST	2000	76°00'00" 18°58'00"	15.30	2.043	537.47	MH09MH2424	27/5/2019 23/11/2019	3.5,3.2,3.1,3.9	04
181	Chikundra ST	2006	76°15'25" 17°48'20"	16.70	1.257	125.43	MH09MH2425	27/5/2019 27/11/2019	3.5,3.9	02
182	Jalkot ST	1999	76°10'00" 17°47'00"	15.30	1.850	416.55	MH09MH2426	16/5/2019 27/11/2019	3.5,3.2,3.1,3.9	04
183	Achler ST	1999	---	15.72	1.296	159.02	MH09LH0702	27/5/2019 27/11/2019	3.5,3.7,3.2,3.34,3.16	05
184	Kesarjawalga	1997	74° 30' 00" 17° 30' 00"	17.72	1.245	207	MH09MH1430	21/5/2019 25/11/2019	3.5,3.7,3.2,3.9,3.34	05

Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Date of Inspection	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11
<b>[2] CHIEF ENGINEER, WATER RESOURCES, AURANGABAD.</b>										
<b>(1) B.I.P.C., PARLI(VAIJNATH)</b>										
<b>(a) LATUR M.I.D., LATUR</b>										
185	Ghonshi (MI) tank	1991	77° 09' 20" 18° 31' 45"	19.85	1.247	494.08	MH09LH1226	31/5/2019 31/11/2019	3.7, 3.1, 3.2, 3.22, 3.34, 3.20	06
186	Dongarkonali ST	2015	77°60'00" 18°36'00"	16.24	4.134	1182.77	MH09MH2292	31/5/2019 30/11/2019 18/9/2019	3.5,3.2,3.1	03
<b>( b) EE, BEED IRRIGATION DIVISION, BEED</b>										
187	Chanai ST-2	2009	79°19'51" 18°44'47"	20.65	0.9125	---	MH09MH2291	14/5/2019 12/11/2019	3.5,3.33	02
188	Sarfarajpur ST	2011	76°15'12" 18°51'11"	17.40	1.2916	---	MH09MH2300	1/6/2019 13/11/2019 23/1/2020	3.2, 3.1, 3.3, 3.5	04
189	Sakud ST-2	2012	76°25'00" 18°46'21"	---	---	---	MH09MH2298	14/5/2019 12/11/2019 23/1/2020	3.5, 3.9, 3.19, 3.16, 3.33, 3.1, ,3.2, 3.3, 3.7	09
190	Surnerwadi ST	2012	76°12'30" 18°53'00"	18.10	1.78	187.28	MH09MH2301	20/5/2019 NA 23/1/2020	3.2, 3.1, 3.5, 3.7, 3.16	05
191	Morphali	2010	---	---	3.4538	1213.84	MH09MH2294	20/5/2019 NA 23/1/2020	3.1, 3.2, 3.5, 3.16	04
192	Nandagaul ST	2011	76°33'11" 18°46'51"	17.70	1.3028	100.90	MH09MH2295	1/6/2019 13/11/2019	NIL	00



Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Date of Inspection	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11
<b>(2) AURANGABAD IRRIGATION CIRCLE, AURANGABAD</b>										
<b>(a) MINOR IRRIGATION DIVISION NO. 1, AURANGABAD</b>										
193	Rawala	1999	75°52'00" 20°35'00"	23.50	5.31	468.68	MH09MH1511	29/5/2019 NA	3.2, 3.22, 3.21	03
194	Nimkhedi	2005	75°14'00" 20°29'30"	15.25	1.39	154	MH09MH2095	17/5/2019 NA	3.2, 3.16, 3.21	03
195	Phulambari	2005	75°20'20" 20°20'00"	17.00	6.11	1019	MH09LH2381	7/6/2019 NA	3.10, 3.2, 3.16	03
196	Halda-Jalki MI Tank	2005	75°37'00" 20°30'00"	16.54	1.377	160.70	MH09MH2293	30/5/2019 NA	3.10, 3.9	02
197	Kolwadi MI Tank	1996	75°02'30" 20°5'00"	17.90	2.159	346.68	MH09MH1760	15/5/2019 NA	3.5, 3.7, 3.9, 3.22, 3.21	05
198	Pimpalwadi	2001	76°02'00" 20°32'00"	15.75	2.694	288.047	MH09MH2296	29/5/2019 NA	3.1, 3.9, 3.10, 3.22	04
<b>(b) JALNA MINOR IRRIGATION DIVISION, JALNA</b>										
199	Chandai Eco LMI Tank	2006	70°50'00" 20°00'00"	15.05	2.913	465.39	MH09LH1000	7/5/2019 NA	3.1, 3.22, 3.21	03
200	Banegaon LMI Tank	2006	70°50'00" 20°70'00"	15.50	6.982	974.26	MH09MH2302	7/5/2019 NA	3.1	01
201	Palaskheda LMI Tank	NA	75°04'09" 20°05'00"	16.70	9.013	929.09	MH09MH2321	7/5/2019 NA	3.1, 3.22	02
202	Taltondi MI Tank	2007	76°26'00" 19°42'00"	20.18	2.258	23.63	MH09MH2312	24/5/2019 NA	3.1, 3.2, 3.34	03
203	Pimpalwadi ST	2010	76°06'57" 19°05'57"	20.59	1.61	419.09	MH09MH2297	28/5/2019 NA	3.2	01
<b>(3) NANDED IRRIGATION CIRCLE, NANDED.</b>										
<b>(a) NANDED IRRIGATION DIVISION (North) , NANDED</b>										
204	Hudi	1976	78° 30' 00" 19° 21' 15"	15.75	1.622	98	MH09MH0546	17/5/2019 6/12/2019	3.10	01
205	Dongargaon	1985	78°09'30" 19°26'30"	22.60	9.60	729	MH09LH1028	17/5/2019 6/12/2019	3.10, 3.2, 3.9, 3.20, 3.16	05
206	Nagzari (Kinwat)	1984	76°16'00" 19°36'00"	17.25	1.895	624	MH09MH1057	17/5/2019 6/12/2019 29/1/2020	3.2, 3.10, 3.16, 3.1, 3.34, 3.5, 3.9, 3.7	08

Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register	Date of Inspection	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11
207	Warsangvi	1987	78°10'00" 19°37'15"	15.60	2.537	315	MH09MH2111	17/5/2019 7/12/2019	3.2	01
208	Loni	1979	78°10'00" 19°42'30"	21.6	9.217	759	MH09LH0766	17/5/2019 7/12/2019	3.9,3.22,3.20	03
209	Sindgi	1976	78°03'30" 19°42'00"	16.64	1.67	104	MH09MH0547	17/5/2019 7/12/2019	3.2,3.6	02
210	Renapur Sudha	1975	77°47'00" 19°20'00"	19.40	1.87	1170	MH09MH1555	20/5/2019 1/12/2019 29/1/2020	3.5,3.7,3.1,3.22,3.1,3.2,3.9,3.4	08
211	Nichpur	1978	77°36'00" 19°42'00"	15.56	2.32	168	MH09MH0678	17/5/2019 7/12/2019	NIL	00
212	Pimpalgaon (KI)	1976	76°19'00" 19°39'00"	15.75	22.50	143	MH09MH0554	17/5/2019 6/12/2019 29/1/2020	3.22,3.6,3.1,3.2,3.5,3.3,3.4,3.21	08
213	Jaldhara	1975	78°70'00" 19°24'00"	19.40	1.97	173	MH09MH0537	17/5/2019 6/12/2019	3.2,3.22,3.21,3.6	04
214	Sirpur	1986	78°18'00" 19°49'15"	28.40	6.05	975	MH09MH1133	17/5/2019 7/12/2019	3.7,3.21	02
215	Palaiguda	1999	78°04'44" 19°04'40"	19.85	5.987	193.10	MH09MH1513	17/5/2019 7/12/2019	3.7,3.22	05
216	Mandvi	1998	78°16'30" 19°47'00"	21.98	7.07	839.13	MH09LH1038	17/5/2019 7/12/2019	3.22,3.21	02
<b>(b) NANDED IRRIGATION DIVISION (South) , NANDED</b>										
217	Karadkhed	1976	77°29'00" 18°28'30"	20.90	12.37	1560	MH09MH0735	12/6/2019 7/1/2020	3.10,3.2,3.23,3.34,3.21,3.20,3.19,3.6	08
218	Ghagardara	1986	77°11'36" 18°45'00"	19.84	2.812	629	MH09MH2075	22/6/2019 22/1/2020	3.7, 3.9, 3.13, 3.23, 3.20,3.34	06
219	Kedarnath	1964	76°16'00" 19°26'00"	17.00	6.05	792.75	MH09MH0095	24/5/2019 31/12/2019	3.7, 3.10, 3.9, 3.34, 3.21	05
220	Kudala	1975	77°15'00" 18°47'30"	17.50	4.89	875	MH09MH0521	20/5/2019 11/10/2019	3.10, 3.13, 3.34, 3.20	04
221	Kundrala	1969	77°19'30" 18°37'45"	18.50	14.68	811	MH09MH0193	12/6/2019 7/1/2020	3.10, 3.2, 3.9	03

Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register	Date of Inspection	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11
222	Pethwadaj	1975	79°10'00" 19°29'00"	19.40	11.48	1170	MH09MH0841	22/6/2019 22/1/2020 30/1/2020	3.10, 3.13, 3.34, 3.20, 3.1, 3.2, 3.4, 3.5, 3.7, 3.21	10
223	Pota	1973	77°36'00" 19°26'00"	15.50	15.50	146	MH09MH0332	24/5/2019 16/1/2020	3.5, 3.10, 3.2, 3.9, 3.13, 3.22, 3.34, 3.20, 3.6	09
224	Sayalwadi	1977	77°25'30" 19°21'00"	15.50	2.337	NA	MH09MH0764	21/5/2019 16/1/2020	3.10, 3.2, 3.9, 3.13, 3.34	05
225	Pimprala	1968	77°34'30" 19°19'00"	15.00	26.32	349	MH09LH0162	24/5/2019 31/12/2019	3.10, 3.34, 3.21	03
226	Shirur	1977	78°30'00" 19°21'15"	16.14	1.78	216	MH09MH066	12/6/2019 7/1/2020	3.10, 3.2, 3.9, 3.13, 3.6	05
227	Sonpeth-wadi	1974	77°20'00" 18°70'00"	15.10	1.70	274.20	MH09MH0535	12/6/2019 7/1/2020	3.10, 3.2, 3.13, 3.34, 3.21	05
228	Wazar (ST)	2010	77° 24' 24" 18° 20' 00"	25.30	1.22	232.57	MH09MH2113	12/6/2019 7/1/2020	3.10, 3.2	02
229	Yedur	2005	77° 18' 00" 18° 01' 00"	18.01	13.160	1744	MH09MH1646	12/6/2019 7/1/2020	3.5, 3.2, 3.19, 3.16	04
<b>(C) Lendi Project Division, Degloor</b>										
230	Undri Manjri (ST)	2015	77° 17' 00" 18° 39' 25"	19.25	1.71	202.39	MH09MH2110	17/5/2019 30/1/2020 30/1/2020	3.2, 3.4, 3.5, 3.1, 3.9, 3.19, 3.16	07
231	Jamkhed (LMI)	2000	77° 29' 00" 18° 30' 00"	16.90	10.23	1075.70	MH09MH1790	3/7/2019 20/12/2019	3.2, 3.21	02
<b>(d) PURNA IRRIGATION DIVISION, BASAMATNAGAR</b>										
232	Pedgaon	1975	77°15'00" 19°45'00"	10.20	26.16	2395	MH09MH0502	28/5/2019 17/11/2019	3.7, 3.34	02
233	Aundha	1975	77°12'00" 19°32'00"	15.18	1.791	238	MH09MH0491	21/5/2019 24/11/2019	3.5, 3.9, 3.21, 3.34	04
234	Rajwadi (Basmatnagar)	2000	77°00'00" 19°30'00"	16.60	2.12	191	MH09MH2100	21/5/2019 24/11/2019	3.2, 3.10, 3.22, 3.34	04
235	Ghordari	1988	76°49'00" 19°51'00"	17.12	22.65	323	MH09MH1194	27/1/2020 17/11/2019	3.1, 3.2, 3.5, 3.9,	04

Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Date of Inspection	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11
<b>[2] UPPER COMMISSIONER &amp; CHIEF ENGINEER, REGIONAL SOIL AND WATER CONSERVATION , PUNE</b> <b>(1) Regional water conservation officer, Soil &amp; water conservation Department, Aurangabad</b> <b>(a) District water conservation officer, Soil &amp; Water conservation Division, Nanded</b>										
236	Jahur MI Tank	1989	77°26'00" 17°26'00"	15.62	1.46	231	MH09MH1271	16/5/2019 27/11/2019 30/1/2020	3.7,3.9,3.2,3.20,3.1,3.3,3.4	07
237	Nanda MI Tank	1999	77°49'30" 19°07'30"	15.20	1.373	151.35	MH09MH0545	7/5/2019 20/11/2019	3.5,3.7,3.9,3.20	04

**Table 2.12**

Damwise Health status report of Private Class-I dams with category-1 deficiency

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
----- No Such Dams under this class -----						

**Table 2.13**

Damwise health status report of private Class-I dams with category-2 deficiency

Sr. No	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
----- No Such Dams under this class -----						

**Table 2.14**

Damwise Health status report of Private Class-I dams with category-3 deficiency

Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection Pre & Post	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11	12
<p style="text-align: center;">----- No Such Dams under this class -----</p>											

**Table 2.15**

Damwise Health status report of Private Class-II dams with category-1 deficiency

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
----- No Such Dams under this category is reported -----						



**Table 2.16**

Damwise health status report of private Class-II dams with category-2 deficiency

Sr. No	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
<b>(1) AURANGABAD MUNICIPAL CORPORATION, AURANGABAD</b>						
1.	Name : <b>KHAM ( SANGVI)</b> Date of completion : 1968. Location : Longitude: 75° 21' 247" Latitude : 19° 56' 17" Gross Capacity :29.70 Mm3 Height : 10.20 m. Design spillway Capacity N.A. m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0175</b>	8/1/2020	Shri.P.H.Mohite EE, DSD-3, DSO, Nashik. C.T.Mondhe,SDE, DSD-3,DSO, Nashik-4.	Drains  Outlet	Drains are not free from silt & vegetation (B2)  Slab of outlet well is damaged & railing and planks are absent. (B5)  Relevant Documents for inspection of dam not available on site.	The tail end of C-drains shall be open & cleaned and shall be kept free flowing.  Necessary repairs may be carried out.  It should be maintained on site for inspection.
2.	Name : <b>OVER ( HARSUL )</b> Date of completion : 1964 Location : Longitude : 75° 19' 56" Latitude : 19° 50' 32" Gross Capacity : N.A.. Mm3 Height : 16.0 m. Design spillway Capacity N.A.. m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0101</b>	8/1/2020	Shri.P.H.Mohite EE, DSD-3, DSO, Nashik. C.T.Mondhe,SDE, DSD-3,DSO, Nashik-4.	E / Dam.  Drains	Undulation on top of dam observed.(B1)  Drains are not free from silt & Vegetation (B2)  Relevant Documents for inspection of dam not available on site.	Dam section to be brought to correct design profile and level by adding earthwork duly compacted properly.  The tail end of C-drains shall be open & cleaned & shall be kept free flowing.  It should be maintained on site for inspection.

Sr. No	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Observation/ Significant Deficiencies Noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
<b>(2) JALNA NAGAR PARISHAD, JALNA</b>						
<b>3</b>	Name : <b>GHA NEWADI</b> Date of completion : 1975. Location : Longitude: 75° 51' 03" Latitude : 19° 54' 42" Gross Capacity :14.44 Mm3 Height : 16.00 m. Design spillway Capacity N.A.. m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0053</b>	7/1/2020	Shri.P.H.Mohite EE, DSD-3, DSO, Nashik. C.T.Mondhe,SDE, DSD-3,DSo, Nashik-4.	E / Dam          Drains          W.W. bar & TC	Section of dam is not as per design Section. (B1)          Longitudinal cracks is observed. (B4)          Toe drains are not free from silt & vegetation (B3)          Various Components of right side w.w. bar is heavily damaged. (B7)          Relevant Documents for inspection of dam not available on site.	Dam section to be brought to correct design profile and level by adding earthwork duly compacted properly.          Cracks should be filled with appropriate casing material.          The d/s area at least up to above 200m. from toe, shall be free from Stagnation. The area should be well drained.          Necessary repairs should be carried out on priority.          It should be maintained on site for inspection.
<b>(3) UD GIR NAGAR PARISHAD, UD GIR DIST. LATUR</b>						
<b>4</b>	Name : <b>BANSHELKI</b> Date of completion : 1968. Location : Longitude: 77° 05' 32" Latitude: 18° 21' 53" Gross Capacity :NA Mm3 Height : 23.00 m. Design spillway Capacity N.A.. m3/sec. Sr No in National Register of Large Dams 2009 : <b>NA</b>	18/9/2019	Shri.P.H.Mohite EE, DSD-3, DSO, Nashik. C.T.Mondhe,SDE, DSD-3,DSo, Nashik-4.	E/Dam          W.W. bar & TC	Dam section is not as per design. Undulations are noticed. (B1)          Pitching is disturbed throughout the dam length. (B3)          Scouring is noticed at d/s side of w.w. bar. (3.19)	Dam section to be brought to correct design profile and level by adding earthwork duly compacted properly.          Pitching should be relayed /replaced.          Necessary arrangements should be provided to stop scouring.

**Table 2.17**

Damwise Health status report of Private Class-II dams with category-3 deficiency

Sr. No	Name of Dam	Date of Completion	Location Longitude/Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register	Date of Inspection Pre & Post	Deficiencies noticed	Total Deficiencies
1	2	3	4	5	6	7	8	9	10	11
<b>(1) AURANGABAD MUNICIPAL CORPORATION, AURANGABAD</b>										
1	KHAM (SANGVI)	1968	75° 21' 24" 19° 56' 17"	21.00	2.97	---	MH09MH0175	8/1/2020	3.1, 3.2, 3.3, 3.5, 3.21, 3.27	06
2	OVER (HARSUL )	1964	75° 19' 56" 19° 50' 32"	16.00	---	---	MH09MH0101	8/1/2020	3.1, 3.2, 3.5, 3.7, 3.16, 3.26, 3.27	07
<b>(2) JALNA NAGAR PARISHAD, JALNA</b>										
3	GHANEWADI	1975	75° 51' 03" 19° 54' 42"	15.00	14.44	231	MH09MH0053	7/1/2020	3.1, 3.3, 3.2, 3.7, 3.20, 3.21, 3.26, 3.27, 3.24, 3.9, 3.6	11
<b>(3) UDGIR NAGAR PARISHAD, UDGIR DIST. LATUR</b>										
4	BANSHELKI	1968	77° 05' 32" 18° 21' 53"	23.00	---	---	Proposed to be included in NRLD	18/9/2019	3.1, 3.2, 3.5, 3.7, 3.9, 3.6, 3.24, 3.27, 3.3	09

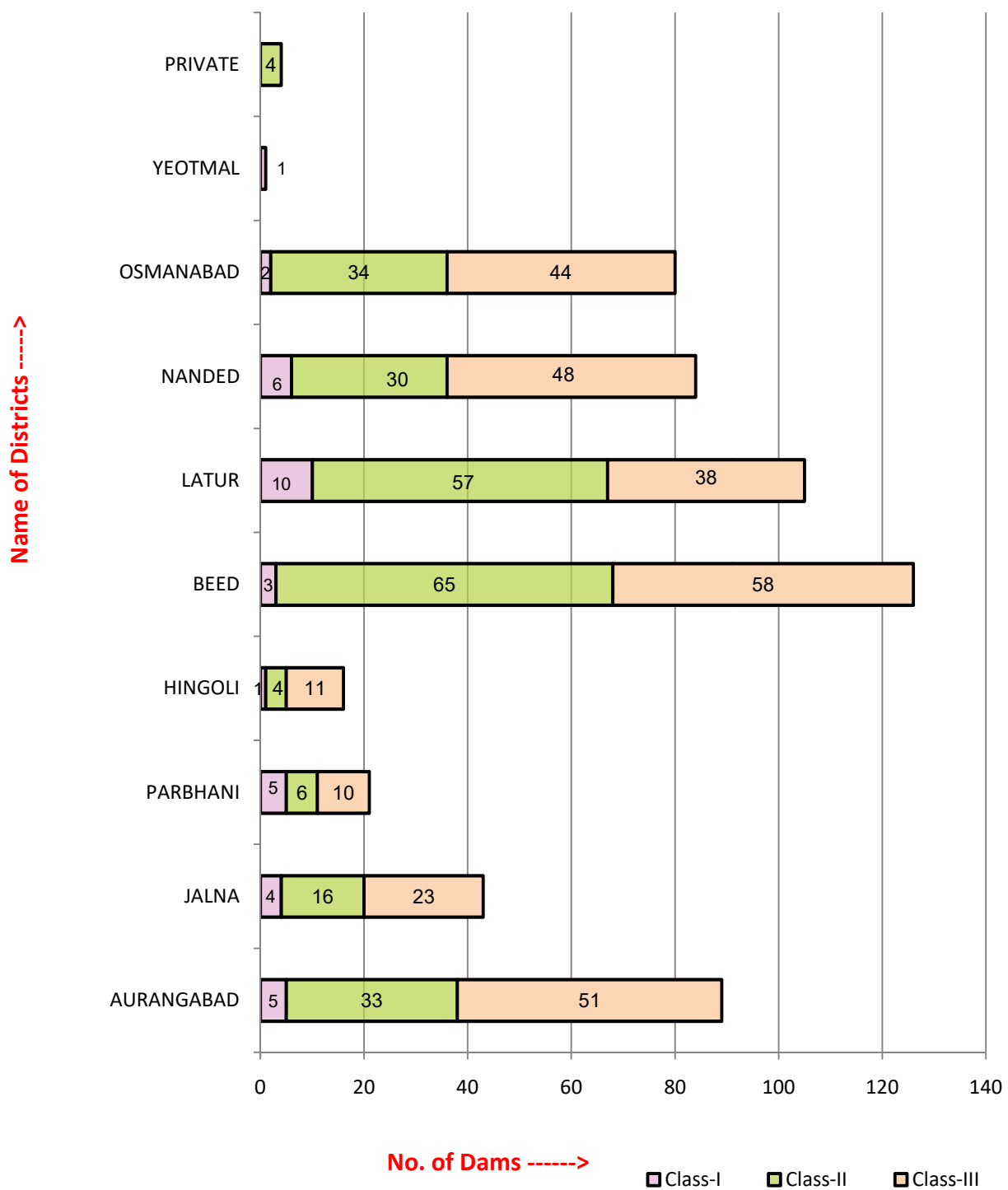
**Table 2.18****Significant category 2 deficiency wise list of class-I dams**

<b>Sr. No</b>	<b>Deficiency</b>	<b>Names of dams</b>	<b>Total no of dams</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	<b>A.1:</b> Boil leakage/ seepage/ wet patches/ slushiness,in Earthen Dam.	1) Yeldari	01
2	<b>A 2:</b> Standing pool / Ponding / Water Logging / Slushy condition on D/S of Dam	1) Siddheshwar	01
3	<b>A 3 :</b> Leakages in vicinity of junction between earthen dam & masonry dam portion.	---	---
4	<b>A 4 :</b> Major leakages through outlet conduit/pipe joints/Gates	1) Lower Manar	01
5	<b>A 5 ;</b> Relief wells not functioning properly./ Abnormal rise in water level in wells.	1) Yeldari	01
6	<b>A 7 :</b> Retrogression /scouring in tail channel.	1) Lower Manar	01
7	<b>A 8 :</b> Drainage gallery in accessible/No adequate lighting./ No dewatering arrangement or failure.	1) Yeldari 2)Shivna Takli	02
8	<b>A 10 :</b> Heavy leakages through porous pipes/ through dam body in gallery /monolith joints.	1) Shivna Takli	01
9	<b>A 11 :</b> Sweating / seepages through D/S of masonry dam	1) Yeldari 2)Shivna Takli	02
10	<b>A 12 :</b> Excesssive considerable leaching from seepage water.	1) Manjra	01
11	<b>A 13 :</b> Swelling / minor cracking observed on body of dam	--	--
12	<b>A 14 :</b> EDA / Stilling basin damaged/Hydraulic performance not good	--	--
13	<b>A 15 :</b> Leakages through spillway /piers//junction of flank wall.	1) Manjra	01
14	<b>A 18 :</b> Wire ropes of hoist not in good condition/hoisting structure damaged/cracked.	1) Manjara 2) Siddheshwar	02
15	<b>A 19 :</b> Alternative power system Generator for gate operation not working properly.	--	--
16	<b>B 5 :</b> Outlet gates not functioning properly. Stem rod is bent(Service gate/Emergency gate/Stop log gate/sluiice gate)	1) Shivna Takli	01
17	<b>B 12 :</b> Damage to Rubber seals/Leakages through gates.	1) Shivna Takli	01

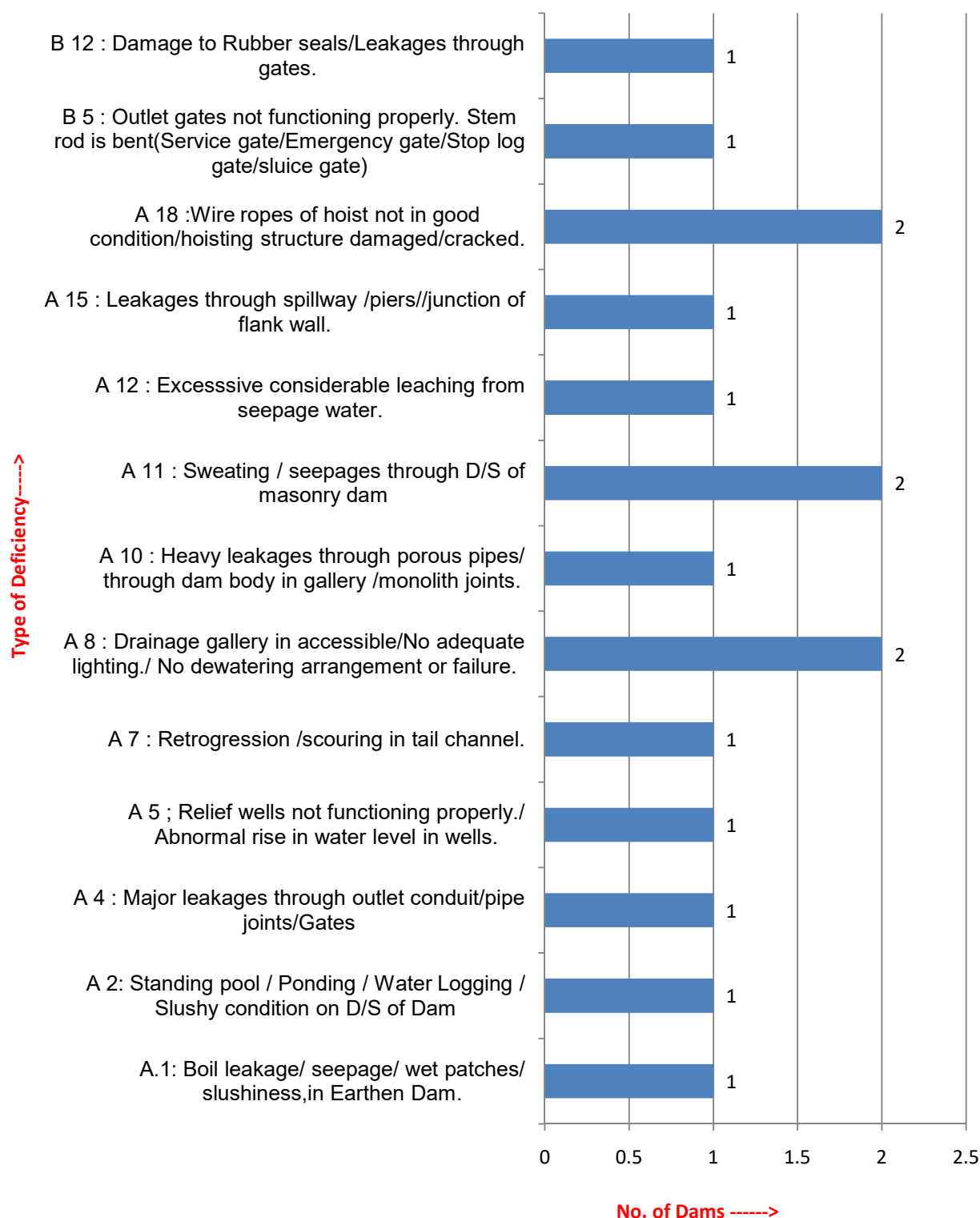
**Table 2.19****Significant category 2 deficiency wise list of class-II dams**

<b>Sr. No</b>	<b>Deficiency</b>	<b>Names of dams</b>	<b>Total no of dams</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>1</b>	<b>A.1:</b> Boil leakage/ seepage/ wet patches/ slushiness,in Earthen Dam.	1) Ajantha Andhari 2) Limbachiwadi-1 3) Limbachiwadi-2 4)Dethewadi 5)Kasari 6) Ghonshi	06
<b>2</b>	<b>A 2:</b> Standing pool / Ponding / Water Logging / Slushy condition on D/S of Dam	1) Ambadi 2) Sonala 3) Bindusara 4) Lokarwadi	04
<b>3</b>	<b>A 3 :</b> Leakages in vicinity of junction between earthen dam & masonry dam portion.	1)Lokarwadi 2)Kasari 3)Dethewadi	03
<b>4</b>	<b>A 4 :</b> Major leakages through outlet conduit/pipe joints/Gates	---	---
<b>5</b>	<b>A 5 ;</b> Relief wells not functioning properly./ Abnormal rise in water level in wells.	1)Dhamna	01
<b>6</b>	<b>A 6 :</b> Outlet well is damaged/not in good condition /cracks observed/jets of water in well.	1) Nimbhora 2) Sanjul 3) Kasari 4) Sindgaon (ST) 5) Palaiguda 6)Tinraj	06
<b>7</b>	<b>A 7 :</b> Retrogression /scouring in tail channel.	1) Dhoksal 2) Dhamna 3)Ambadi 4)Banoti 5)Sanjul 6) Anandwadi 7)Sonala (ST) 7) Halli (Kh) 8)Tinraj	08
<b>8</b>	<b>A 14 :</b> EDA / Stilling basin damaged/Hydraulic performance not good	1) Dhoksal 2) Soyegaon 3) Halli (Kh) 4) Tinraj	04
<b>9</b>	<b>A 16 :</b> Damages / foundation erosion/ scour/undermining observed in vicinity of flank walls/ guide walls/ junction walls/return walls	1) Soygaon 2)Kaldari 3) Anandwadi (ST) 4)Ajanta Andhari 5) Kendrewadi 6) Halad wadhona (ST) 7) Sonala (ST), 8) Halli (Kh)	08
<b>10</b>	<b>B 1</b> Dam section is not as per design	1) Kaldari 2)Sanjul 3)Ghonshi MI Tank	03
<b>11</b>	<b>B 3 :</b> Considerable settlement of embankment / Rock toe/Pitching/ U/S & D/S slopes, bulging/concavity of slopes	1) Dhoksal 2)Ambadi 3)Anandwadi 4)Kunsawali 5)Palaiguda	05
<b>12</b>	<b>B 4:</b> Longitudinal / Transverse cracks/ low area/sink holes/gully formation on top side slope of earthen dam	1) Tinraj	01
<b>13</b>	<b>B 5 :</b> Outlet gates not functioning properly. Stem rod is bent(Service gate/Emergency gate/Stop log gate/slucie gate)	1) Soygaon 2)Sanjul 3)Lokarwadi 4)Ghonshi	04
<b>14</b>	<b>B 7:</b> Waste weir/waste weir bar not in good condition/coping damaged/leakage through waste weir	1) Dhoksal 2) Dhamna 3)Kalyan Girija 4)Banoti 5)Kaldari 6)Nimbhora 7)Sanjul 8)Ajanta Andhari 9) Halad wadhona 10)Bindusara 11)Limbachiwadi-1 12) Limbachiwadi-2 13)Dethewadi 14) Lokarwadi 15) Kunsawali	15
<b>15</b>	<b>B 8 :</b> Pointing on U/S face of dam not in good condition./deterioration spalling of concrete surface.	--	--
<b>16</b>	<b>B 12 :</b> Damage to Rubber seals/Leakages through gates.	1)Lokarwadi	01

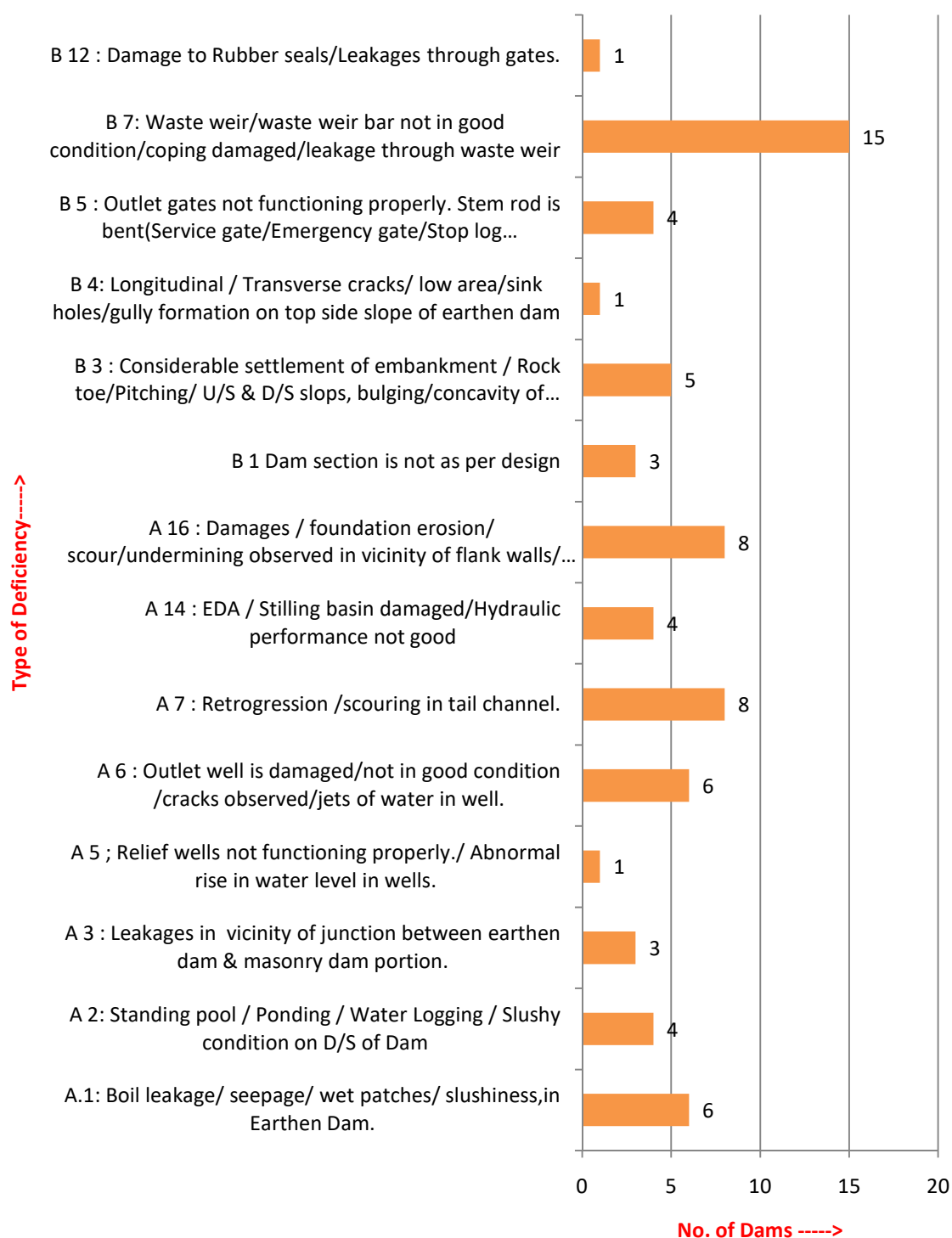
**Chart-1**  
**Districtwise & Classwise Dams in Marathwada**  
**Region**



**Chart-2**  
**Significant Category-2 deficiencies in Class-I Dams**



**Chart-3**  
**Significant Category-2 deficiencies in Class-II dams**





# **ANNEXURE- 1**

## **General Information For Dam Safety Inspections**

### **1.0 Time Schedule of inspections**

The Government of Maharashtra has designed systematic approach for monitoring each and every dam. The periodical inspection of dams must be completed as per following schedule.

Type of Inspection	Last dates for	
	Completion of inspection	Sending of inspection reports to concerned authorities.
(1) Pre Monsoon	15 <sup>th</sup> May	30 <sup>th</sup> June
(2) Post Monsoon	30 <sup>th</sup> November	31 <sup>st</sup> December
(3) Special inspection before the first filling (Report need not be sent to Dam safety organisation)	30 <sup>th</sup> April	31 <sup>st</sup> May
(4) Special inspection after the first filling	within one week after the lake attains the intended storage level.	within one week from the date of inspection.
(5) Special inspection after a severe distressing event or accident or incident.	Immediately after the event is noted.	Within one week form the date of inspection?

### **2.0 Classifications of dams -**

The dams are categorized into three types based on their component and features as below.

SR No	Type of Dam	Height from general level of deepest foundation in m.	Impounded gross storage capacity Up to FRL in M Cum	Spillway capacity	Type of spillway
1	2	3	4	5	6
1	Large Dam (Class-I)	Above 30 m	Above 60 M Cum	Above 3,000 Cumecs	Gated Spillway
2	Large Dam (Class-II)	15 m to 30 m	15 MCum upto 60 MCum	2,000 to 3,000 Cumecs	Ungated Spillway
3	Large Dam (Class-III)	10 m.to15m	1.0 MCum upto 15 MCum	2,000 to 3,000 Cumecs	Ungated Spillway

### 3.0 Field inspection authorities –

The designated inspection authority for periodical inspection of dam depending upon the classification of type of dam is as below :-

SR No	Type of Dam	Inspection authority	Inspection Reports to be sent to	Test Inspection
1	2	7	8	9
1	Large Dam (Class-I)	Superintending Engineer/ Administrator	1) Chief Engineer 2) Superintending Engineer Dam Safety Organisation.	Test Inspection by the Regional Chief Engineer/ Chief Administrator for the dams having height more than 60 m or storage capacity more than 1000 MCum or spillway capacity 10000 Cumecs or more
2	Large Dam (Class-II)	Executive Engineer	1) Superintending Engineer/ Administrator 2) Superintending Engineer, Dam safety Organisation	
3	Large Dam (Class-III)	Sub-Divisional Eng./Sub Divisional Officer	1)Superintending Engineer/ Administrator 2) Executive Engineer	

#### 4.0 preparation of annual health status reports of class-I and class-II dams.

Dam safety organisation takes over view of the periodical inspection reports of class-I & class-II dams received from field officers, and significant deficiencies are immediately reported to concern authorities to carry out remedial measures. Also based on all periodical inspection reports from field officers and test inspections by DSO officers, the Region wise Annual Health Status Report has been prepared and sent to government, CWC and all concerned Chief Engineers.

#### 5.0 Preparation of annual health status report of class-III dams

The responsibility of Health and Safety monitoring of class-III dams lies with the respective Chief Engineer. Hence for Class-III Dams based on periodical inspection reports, Annual Health Status Report of Class-III dams should be prepared by Chief Engineers and sent to DSO for record.

#### 6.0 Guidelines regarding preparation of annual health status report of identified large dams-

ASHR is prepared in DSO as per Central Water Commission New Delhi's guidelines received vide letter No. 3/19/NCDS/HS/DSM/2001/627-56 dated 28 August 2002. As per this letter it is requested that all states / organizations should send the AHSR for all large dams in prescribed Performa in the month of 'April' every year.

## 7.0 Categorization of deficiencies

The deficiencies observed are categorized as per CWC, New Delhi's letter no.3/19/NCDS/HS/DSM/2007/627-56 dated 28 August 2002 , as below

Deficiency Category -1- Dams with major deficiencies which may lead to dam failure.

Deficiency Category -2- Dams with major rectifiable deficiencies needing immediate attention.

Deficiency Category -3- Dams having minor/nil deficiencies.

For further detailing of deficiencies based on the nature and priority of deficiency , DSO has standardized all the three types of deficiencies. These standardized deficiencies are appended as the Annexure -2

## 8.0 National register of large dams-

NRLD is compilation of the large dams (Height above 10 meter) in the country as per information received from the owner of dams. In NRLD the definition of "Large Dams" has been adopted as per the norms of International Commission on Large Dams (ICOLD).

NRLD is consist of a Proforma with 20 columns which gives information regarding salient features of Large Dams. Field officers need to submit the information of new dams to DSO every year upto December. The DSO compiles the information required for NRLD from field officer. The response regarding submission of NRLD information from field officer is very poor . After regular follow up/ correspondence from DSO office incomplete information receives from field officers. In every January the NRLD register is updated. As per NRLD register 2017 Maharashtra state comprises of total 2354 dams (2069 completed dams and 285 under construction dams)

## 9.0 Monitoring of deficiency removal program as per annual health status report.

As per Water Resources Department Marathi letter No.2014 dt.12/02/2015 Director General, Design, Training, Hydrology, Research and Safety MERI Nashik has been entrusted to monitor the deficiency removal program. For this a meeting has been held with all concern Chief Engineers and the program has been prepared for removal of deficiencies as per AHSR.

## 10.0 Suggestion for inspection by field officers -

- 1) Due care shall be taken while filling the salient features of dam and information regarding N.C.D.S. documents.
- 2) It is observed that the information regarding number of instruments installed does not tally for pre & post monsoon inspection report of the same dam. In some cases it is observed that the list of instruments given in previous year do not appears in the current year. These discrepancies should be avoided.
- 3) The periodical inspection reports of all the dams shall be sent in original instead of carbon or xerox copy.
- 4) Ambiguous or incomplete replies shall be avoided. It is necessary to check point wise replies, which should clear and self explanatory.

- 5) The deficiencies observed frequently since long shall be deleted only after rectification work is completed and reported to Dam Safety Organisation, Nashik- 4.
- 6) The inspecting officer is advised to write the word “special attention” in inspection report against all such items wherever immediate attention is necessary from concerned field officer in charge of dam from safety point of dams and life & property on the downstream & would be useful for identifying categorisation of deficiencies in Dam Safety Organisation, Nashik- 4.
- 7) The extent of embankment settlement shall be furnished with its measurement & Reduced Distance (R.D.) and it shall be with compared designed cross section.
- 8) If the existing dam section is found under section as compared to the design section during inspection then the work of resectioning shall be carried out and opinion of inspecting officer shall be stated in inspection report.
- 9) The quantum of retrogression/scouring in tail channel shall be given in inspection report.
- 10) The monolith wise quantum of leaching in galleries and all type of leakages in dam shall be noted in inspection report.
- 11) The trial of spillway gates shall be carried out before monsoon every year & observed condition shall be mentioned in inspection report.
- 12) The information in Appendix II (Performance of meteorological instruments installed) and Appendix III (performance of taking observation of instruments installed in large dams) shall be filled properly and complete.
- 13) The compliance of rectification work of deficiencies of each dam mentioned in status report shall be communicated to Dam Safety Organisation, Nashik every year so that this can be included in the Action Taken Report Part-I of status report.
- 14) Date of inspections is not mentioned in some pre / post inspection reports. This is mandatory since it will reflect in the Annual health status report.

#### **11.0 Standard procedure for confirmation and removal of category-I deficiency of dam.**

A systematic approach and working methodology is very essential to monitor the safety aspects of the dams. Hence in order to avoid any havoc among the stakeholders of dam, the standard procedure for confirmation of category-I deficiency has been circulated by DSO vide Marathi letter No.1491 dt.25/11/2014.

During the scrutiny of Pre and Post Monsoon report or during DSO test Inspection whenever it is found that the deficiency is of Category-I it will be immediately communicated to concern SE and CE. Concerned CE/SE should immediately visit the dam and should satisfied himself that the deficiency pointed out is a major deficiency which may lead to failure of dam, and

should confirm to the DSO regarding the classification of deficiency as per his opinion. If it is confirmed then it will be finalised as Category-I deficiency and accordingly it will be appear in AHSR .

As per government directions, Category-I deficiency should be removed immediately on top priority and after completion of physical work of deficiency removal, Concern Chief Engineer should communicate this to DSO.

## **Annexure II Standardized Deficiencies**

### **Standard Deficiencies Category- 1**

#### **1 E - Earthen Dam.**

- 1E.1** Seepage water has created an open pathway or pipe through dam, which may lead to failure of dam by piping.
- 1E.2** Heavy seepage with muddy or turbid water is observed through any part of dam.
- 1E.3** Seepage water flooding from a boil in the foundation or from relief well on downstream side of dam.
- 1E.4** Outlet well / Head regulator well and hoisting structure is collapsed /completely damaged.
- 1E.5** Outlet pipe in the body of the dam is damaged/failed and uncontrolled outlet- releases eroding Toe of dam.
- 1E.6** Debris stuck under gate or gate leaf is cracked / failed resulting uncontrolled flow through outlet.

#### **1 M - Masonry Dam.**

- 1M.1** Downstream movement or tilting of dam.
- 1M.2** Differential movement of dam blocks/monoliths.
- 1M.3** Vertical Displacement with visible cracking in the body of dam.
- 1 M.4** Spillway gate damaged / not working.

## Standard Deficiencies Category – 2

Deficiency Cat II (A)	Deficiency Cat II (B)
<b>Earthen Dam</b>	
<b>A.1:</b> Boil leakage/ seepage/ wet patches/ slushiness, in Earthen Dam.	<b>B 1</b> Dam section is not as per design
<b>A 2:</b> Standing pool / Ponding / Water Logging / Slushy condition on D/S of Dam	<b>B 2 :</b> Cross and toe drains not working properly/ drains silted or vegetated causing stagnant pool of water.
<b>A 3 :</b> Leakages in vicinity of junction between earthen dam & masonry dam portion.	<b>B 3 :</b> Considerable settlement of embankment / Rock toe/Pitching/ U/S & D/S slopes, bulging/concavity of slopes.
<b>A4 :</b> Major leakages through outlet conduit/pipe joints/Gates.	<b>B 4:</b> Longitudinal / Transverse cracks/ low area/sink holes/gully formation on top side slope of earthen dam.
<b>A5 ;</b> Relief wells not functioning properly./ Abnormal rise in water level in wells.	<b>B 5 :</b> Outlet gates not functioning properly. Stem rod is bent(Service gate/Emergency gate/Stop log gate/slucce gate)
<b>A6 :</b> Outlet well is damaged/not in good condition /cracks observed/jets of water in well.	<b>B 6 :</b> Approach to dam through all weather road not constructed/maintained properly.
<b>A7 :</b> Retrogression /scouring in tail channel.	<b>B 7:</b> Waste weir/waste weir bar not in good condition/coping damaged/leakage through waste weir.
<b>Masonry / Concrete Dam</b>	
<b>A8 :</b> Drainage gallery in accessible/No adequate lighting./ No dewatering arrangement or failure.	<b>B 8 :</b> Pointing on U/S face of dam not in good condition./deterioration spalling of concrete surface.
<b>A 9 :</b> Foundation drains / holes/ porous pipes/choked/ no seepage through foundation drain holes.	<b>B 9:</b> Instruments not in working condition.
<b>A 10 :</b> Heavy leakages through porous pipes/ through dam body in gallery /monolith joints.	<b>B 10 :</b> Leakages through River sluice.
<b>A 11 :</b> Sweating / seepages through D/S of masonry dam	
<b>A 12 :</b> Excessive considerable leaching from seepage water.	
<b>A 13 :</b> Swelling / minor cracking observed on body of dam.	
<b>A14 :</b> EDA / Stilling basin damaged/Hydraulic performance not good.	
<b>A 15 :</b> Leakages through spillway /piers//junction of flank wall.	
<b>A16 :</b> Damages / foundation erosion/ scour/undermining observed in vicinity of flank walls/ guide walls/ junction walls/return walls.	
<b>A 17 :</b> End weir not in good condition / scouring noticed on immediate D/S.	
<b>Spillway gates.</b>	
<b>A 18 :</b> Wire ropes of hoist not in good condition/hoisting structure damaged/cracked.	<b>B 11:</b> Surface paint/steel surface of spillway gates deteriorated.
<b>A 19 :</b> Alternative power system Generator for gate operation not working properly.	<b>B 12 :</b> Damage to Rubber seals/Leakages through gates.
<b>A 20 :</b> Operation of gates not smooth needs repair.	
<b>Other structures</b>	
	<b>B 13 :</b> Heavy vegetation/big trees on embankment top/slope making dam portion not accessible.
	<b>B 14 :</b> Deck bridge slab/ pier / damaged cracked/ alignment disturbed.
	<b>B 15 :</b> Major portion of Pitching damaged/washed

## Standard Deficiencies Category – 3

- 3.1 Profuse growth of bushes and trees over dam portion.
- 3.2 Guard stones/ chainage stones and parapet wall not provided / damaged.
- 3.3 Growth of aquatic weeds in reservoir of dam is observed.
- 3.4 Ant hills or crab holes/holes made by rodents/animals.
- 3.5 Minor undulation/ settlement/ Rain cuts / pot holes observed on dam top & slopes.
- 3.6 Access road/Dam top road surface/ slab joints damaged needs repair.
- 3.7 Pitching on embankment of dam is dislocated /disturbed at some places.
- 3.8 Breaching section is not accessible/ Instruction board showing operation of breaching section is not available.
- 3.9 Section of Toe drain/cross drain/ out fall drain damaged. Some weed growth/ siltation in drains/ nalla.
- 3.10 Surface drain/ Catch water drains for berms are silted /damaged.
- 3.11 Electric cable & wiring are damaged/not in good condition.
- 3.12 Minor leaching in the gallery/ body of dam.
- 3.13 V – notches/ measuring devices are not in working condition/ silted / damaged/ not provided.
- 3.14 Mosquito net door is to be provided to avoid entry of reptiles in the gallery.
- 3.15 Damage to natural slope protection works, guniting damaged/washed out.Wire mesh exposed.
- 3.16 Guide wall/Divide wall/Guide bund/End Sill wall damaged/ Pointing is not in good condition/weep holes not functioning. At some places w.w bar/coping is damaged.
- 3.17 Provision of access to stilling basin/ladder not provided.
- 3.18 EDA ponding with water not possible to Inspect.
- 3.19 Minor erosion/ Scouring/Retrogression/ pot holes in tail channel. Ponding, standing water in EDA /Tail channel.
- 3.20 Lubrication/painting required for parts of Gates / hoisting structure/Rubber seal damaged/ replacement.
- 3.21 Approach bridge to intake well / spillway gates railing /flooring plates damaged / need repairs. Need of ladder for inspection well/EDA.
- 3.22 Minor leakages through outlet gates.
- 3.23 Air vent not periodically cleaned./damaged/closed.
- 3.24 EAP / ROS /GOS /Record drawings/ not provided / not prepared at dam site.
- 3.25 The record of periodical measurements of leakage discharge from dam / relief well is not maintained.
- 3.26 Street light on dam top is not provided/not working.
- 3.27 Security / CC TV camera/entry gate not provided/not working/Unauthorized entry.
- 3.28 Sufficient staff arrangement is not available for security, instrument readings and measurements and maintenance on dam site.
- 3.29 Fencing around dam is not provided/ damaged due to which unauthorized trespassers are seen.
- 3.30 Communication facilities like mobile wireless, warning devices, telephone is not available at dam site.
- 3.31 Sufficient stock of spares/stationary required is not available at dam site.
- 3.32 Security cabin at dam entrance/Irrigation outlets not provided/damaged/needs repair.
- 3.33 Minor leakages through masonry/ concrete dam body/gallery of dam.
- 3.34 Approach channel silted. Trash rack need to be cleaned/ damaged/not provided.
- 3.35 Minor damages to spillway / masonry/ concrete portion of dam.
- 3.36 Porous pipes/foundation drains / holes not periodically cleaned.



### Annexure - III



Photo -1

**Tintraj Dam (Class-II)**

**Taluka - Bhoom Dist - Osmanabad**

**Date of Inspection – 22/01/2020**

**Heavy damages to tail channel & apron was noticed. (A7,A14)**



Photo 2

**Dhamna Dam (Class-I)**

**Taluka - Bhokardan Dist - Jalna**

**Date of Inspection – 09/07/2019**

**Scouring is noticed at Tail channel (A7)**

**Consolidated Health Status Report  
of Identified Large Dams In  
Marathwada Region 2019-20**

**PART – 3**

**Annual performance Report of  
Instruments installed on large Dams based  
on Pre & Post Monsoon- 2019 inspection report**

## **PART – 3 Annual performance Report of Instruments installed on large dams**

### **3.1 General.**

The main purpose of instrumentation in dam is to monitor the safety of the dam and to warn of any changes that could in danger the safety of a dam, as well as to provide a confirmatory check in design assumptions and methods of computation.

Instruments embedded in or installed at the surface of the dam keeps a constant watch over the performance and indicate the distress spots for which remedial measures may be taken. Thus, instruments play an important role in checking the safety of dams and helps in monitoring and evaluating the performance of the dams during the construction as well as during the operation.

Instruments installed on dams are “Eyes and Ears” of dam’s performance vis-à-vis parameters adopted during its design. The field officers in charge of dams have not been able to upkeep and monitor/maintain instruments installed on dams. Efforts should be taken by all field officers to repair / replace instruments at the earliest. Monitoring of vital parameters like seepage, uplift, settlement and timely remedial measures will go long way in extending the life of the dam.

### **3.2 INSTRUMENTATION IN EARTHEN DAMS**

Commonly used instrument in earthen dam are as below.

#### **1) Pore Pressure Meter**

They are installed in bore holes drilled below the foundation or through already completed embankment. Hence cannot be repaired or replaced.

#### **2) Casagrande/standpipe piezometers**

These are used for measuring pore water pressure in soil. These instruments can be installed at any time after completion of construction of the dam at desired location.

#### **3) Twin Tube Piezometers**

These are also used for measuring pore water pressure in earthen dam. These are installed in foundation and embankment during construction of dam. If PVC pipes are found choked due to leached material then it can be cleaned with CuSo<sub>4</sub>. If pipes are cut / broken then it cannot be replaced as those are in body of dam. Outside measuring assembly can be repaired. Periodical maintenance, periodical reading and periodical calibration are utmost important.

#### **4) Earth pressure cells**

These are installed in the foundation. The cables which are outside the body can be replaced if damaged. The sensor cannot be repaired or replaced.

#### **5) Settlement Gauges** (surface settlement gauges/vertical cross arms)

These are used for measuring settlement in earth fill dam, rock fill dam and high embankment. Initially when the dam is under construction these instruments are installed. Settlement of dam is more in initial period, which gradually decreases and it is almost nil after certain period. As such these gauges also do not show settlement after few years.

#### **6) Slope Indicator**

This is installed in foundation with one end at bottom and other at top of the dam. It measures horizontal and vertical movement of the dam. This can be replaced.

### **3.3 INSTRUMENTATION IN CONCRETE/ MASONRY DAM**

Commonly used instruments in concrete / masonry dams are as below.

#### **1) Stress meters**

The stress meters measure stresses inside the dam body. These instruments are embedded in concrete/masonry during construction stage hence cannot be repaired or replaced.

#### **2) Strain meter/ No stress strain meter**

The strain meters measures the deformation in the structure at the particular location due to strain, creep, temperature etc. The main purpose is to determine the stress distribution in the concrete dam during and after construction of dam. Since instrument is installed in the body of the dam it cannot be repaired or replaced.

#### **3) Uplift pressure cells**

The bowl type uplift pressure cells are provided in the foundation of dam. Uplift pressure cell is used for monitoring uplift pressure of water in the foundation of dam and concrete structure. The pressure cell pipes can be cleaned if choked. The pressure gauges can be repaired or replaced.

#### **4) Plumb bob /Co-ordinometer**

Conventional/inverted plumb bob is used to measure deflection of the dam body. It measures the horizontal displacement in dam's foundation and abutment. Plumb bob can be repaired or replaced.

#### **5) Thermocouples/ Thermometers**

These are used to measure the temperature variations in the body of concrete dam. These are installed in layers at various levels and cannot be replaced or repaired after construction.

#### **6) Long gauge extensometer**

It is used to measure the deformation/displacement in the foundation of the concrete dam. Once it fails to function can not be repaired.

#### **7) Joint meters**

The joint meters measure the opening of the joints across which they are embedded. As such they are located near the joints.

### **3.4 STATUS OF DAM INSTRUMENTATION IN THE REGION**

Considering the fact that most of the instruments were non-functional from many years, Govt. of Maharashtra appointed a committee to study these instruments. The recommendations of the committee were accepted and incorporated in G.R. धसुसं २०१४ (६२१/१४) / सिं.व्य. (कामे) dated 31.12.2015. Accordingly to every dam owner, it is informed by Dam Safety Organisation to update the list of instruments at the dam site. In this report the updated details of instruments are considered.

The status of dam instrumentation in the region is given in table No.3.1. Similarly the details of mortality of instruments is given in table No.3.2 and comparison of mortality rate with respect to previous year is given in table no. 3.3

### **3.5 Observations**

- 1) Various instruments numbering 336 have been installed on these 6 dams. Out of which 34 were working and 302 were not working i.e. 89.88% instruments are in non working condition.

- 2) No instrument readings from any dam were available for analysis. No Instrumentation data analysis report have been prepared for Marathwada region
- 3) The observations of the instruments should be taken regularly and need to be sent to D.S.O. Nashik for analysis.
- 4) Comparison of mortality rate of instrument as compared to last year is given as per table No.3.3.

**Table No. 3.1**

**Dam wise Status of Dam Instruments Installed on Large Dams (Aurangabad )**

Sr. No.	Dam Name	Instrument Name	Date of Installation	Total	Functional Status (F/N.F)	
					Functional	Non Functional
1	2	3	4	5	6	7
<b>Chief Engineer (W.R), Aurangabad</b>						
1	Yeldari	Twin tube piezometers	1968	26	0	26
2	Isapur	Twin tube piezometers	81-82	18	0	18
		Stand pipe piezometers	84-85	14	0	14
3	Manar	Twin tube piezometers		18	4	14
<b>CE Wise Total 3 Dams</b>				<b>76</b>	<b>4</b>	<b>72</b>
<b>Chief Engineer &amp; Adm.(C.A.D.A), Aurangabad</b>						
4	Paithan	Twin tube Piezometers	1972 1971	97	0	97
		Cassagrande piezometer	1981	33	23	10
		Vertical settlement gauge + base plate	1973	7	0	7
		Uplift pressure cell	1979 1979	39	0	39
		Plumb bob	1980	1	1	0
		Pore pressure cells	1979	12	0	12
5	Majalgaon	Plumb bob	1987	1	0	1
		Uplift pressure cell	Feb-89	24	0	24
		pore pressure cell	1969	4	0	4
		Cassagrande piezometer	Feb-88	12	6	6
		Twin Tube Piezometers	1984	16	0	16
6	Lower Terna	Cassagrande piezometer	2011	14	0	14
<b>CE Wise Total for 4 Dams</b>				<b>260</b>	<b>30</b>	<b>230</b>
<b>Marathwada Region Total for 6 Dams</b>				<b>336</b>	<b>34</b>	<b>302</b>

**Table No. 3.2**

**Mortality Status of Instruments installed on Large Dams ( Aurangabad )**

Sr. No.	Type of Instruments	Number Of Instruments			
		Total	Working	Non-Working	Mortality (%)
1	2	3	4	5	6
<b>(A) Earth Dams</b>					
1	Casagrande/ Stand pipe Piezometers /Vibrating	73	29	44	60.27
2	Twin tube piezometers	175	4	171	97.72
3	Horizontal/Vertical device / Cross arm surface settlement plug	7	0	7	100
4	Earth pressure cells	-	-	-	-
5	Slope indicator	-	-	-	-
<b>Total</b>		<b>255</b>	<b>33</b>	<b>222</b>	<b>87.05</b>
<b>(B) Masonry Dams</b>					
1	Pore pressure meters	16	0	16	100
2	Stressmeter	-	-	-	-
3	Strainmeter/ No stress-strain meter	-	-	-	-
-4	Uplift pressure cells	63	0	63	100
5	Plumb bob/ Inverted Plumb Bob / co-ordimeter	2	1	1	50
6	Long Gauge extensometer, Multiple Bore hole extensometer	-	-	-	-
7	Thermometers	-	-	-	-
8	Jointmeters /Dial Gauge	-	-	-	-
9	Tiltmeter	-	-	-	-
<b>Total</b>		<b>81</b>	<b>01</b>	<b>80</b>	<b>98.76</b>

	Instruments in	Total	Working	Non Working	Mortality
A)	Earth Dams	255	33	222	87.05
B)	Masonry Dams	81	01	80	98.76
	<b>Grand Total</b>	<b>336</b>	<b>34</b>	<b>302</b>	<b>89.88</b>



**Table 3.3**  
**Comparative Statement For Status of Instruments in Dams**  
**Aurangabad Region**

Year		HSR - 2018					HSR - 2019				
Sr. No.	Name of Chief Engineer	Total Dams	Total Instruments	Functioning	Not Functioning	% Functioning	Total Dams	Total Instruments	Functioning	Not Functioning	% Functioning
1	Chief Engineer (WR), Aurangabad	03	76	04	72	05	03	76	04	72	5.27
2	Chief Engineer (CADA), Aurangabad	03	260	44	216	16.92	03	260	30	230	11.53
<b>Total</b>		<b>06</b>	<b>336</b>	<b>48</b>	<b>288</b>	<b>14.28</b>	<b>06</b>	<b>336</b>	<b>34</b>	<b>302</b>	<b>10.11</b>

**Consolidated Health Status Report  
of Identified Large Dams In  
Marathwada Region 2019 – 20**

**PART – 4**

**Annual performance Report of  
Meteorological instruments installed on dams  
based on Pre & Post Monsoon- 2019 inspection  
Report**

## **PART - 4 Annual performances Report of Meteorological instruments installed on dams**

### **4.1 General**

Hazard potential of dam depends upon the possible hazard it poses to population on the downstream during flood. In case of gated spillways, generally flood is considered to impinge when reservoir is at F.R.L. If flood forecasting and warning systems are in place, flood impingement can be considered at lower when F.R.L. considering prior depletion.

The establishment of hydro-meteorological stations in the vicinity of every Class-I dam and rain gauge network in its catchments assumes vital importance due to its role in flood forecasting and warning. The hydro-meteorological station shall be capable of recording data relating to, among other parameters, rainfall, atmospheric pressure, maximum & minimum temperature and humidity, wind speed, wind direction, height of waves and reservoir water temperature. It is important that a representative proportion of the rain gauge network is linked to flood forecasting and warning control centre by telemetry.

Performance of the meteorological instruments dealt in this report is only the instruments operated and maintained by Dam authorities. In addition to these, there is vast network of the hydro meteorological stations which is operated and maintained by Hydrology Project. Same is not dealt in this AHSR.

### **4.2 Observations**

From Pre/Post Monsoon Reports it is seen that the ANNEXURE-IV which is “**Checklist of Various Meteorological Instruments installed on Dams**” is not filled properly and quantity of number of instruments varies from year to year. As this status of instruments is submitted to C.W.C., New Delhi. Field authorities need to make sure that correct information is filled. Table 4.1 gives the dam wise status of the meteorological instruments, and Table 4.2 gives the status of morality of meteorological instruments installed in the region.

1. As per Pre/Post Monsoon reports of Marathwada region it is seen that 132 various meteorological instruments installed on dams out of which 87 are functioning and 45 are non functioning. The non-functioning should be repaired/replaced on priority.
2. As per the government circular CDA-1013/(207/13)/CAD(works)/ August-2013. It is mandatory to install **Pan Evaporimeter** to measure evaporation on all major and medium projects.

Efforts should be taken by field officers to establish automatic flood warning systems which will help in saving lives, livestock and property and will invariably contribute to lessening of the overall impact of floods.

**Table- 4.1**

**Damwise status of meteorological instruments installed on dams**

Sr. No.	Name of dam with location	Name of instruments	Total	Performance		Remarks
				Working	Not working	
1	2	3	4	5	6	7
1	Paithan	1) Rain Gauge on Dam (ordinary)	2	2	0	
		2) Rain Gauge in catchment( ordinary)	5	5	0	
		3) Rain Gauge on Dam (self-recorder)	1	1	0	
		4) Pan Evaporimeter	2	2	0	
		5 Wind direction recorder	1	1	0	
		6) Water stage recorder	2	1	1	
		7)Cup counter Anemometer	4	1	3	
2	Narangi	1)Rain Gauge on Dam (ordinary)	1	0	1	
3	Bor Dahegaon	1)Rain Gauge on Dam (ordinary)	1	1	0	
4	Lower Dudhana	1)Rain Gauge in catchment (self-recorder)	4	0	4	
		2) Rain Gauge on dam (Ordinary)	1	0	1	
		3) Rain Gauge on dam (Self-recorder)	1	0	1	
		4)Pan evaporimeter	1	0	1	
5	S.C. Vishnupuri	1)Rain Gauge on Dam (ordinary)	1	1	0	
		2)Pan Evaporimeter	1	1	0	
6	Lahuki	1)Rain Gauge on Dam (ordinary)	1	1	0	
7	Soyegaon	1)Rain Gauge on Dam (ordinary)	1	1	0	
8	Sukhana	1)Rain Gauge on Dam (ordinary)	1	1	0	
9	Tembhapuri	1) Rain Gauge on Dam (ordinary)	1	0	1	
10	Dheku	1) Rain Gauge on Dam (ordinary)	1	1	0	
11	Kesapur	1) Rain Gauge on Dam (ordinary)	1	0	1	
12	Khelna	1) Rain Gauge on Dam (ordinary)	1	1	0	
13	Nimbhaora	1) Rain Gauge on Dam (ordinary)	1	0	1	
14	Jui	1) Rain Gauge on Dam (ordinary)	1	1	0	
15	Siddheshwar	1) Rain Gauge on Dam (ordinary)	1	1	0	
		2) rain gauge on Dam(self-recorder)	1	0	1	
		3) Pan Evaporimeter	1	0	1	
		4) Water level recorder	1	0	1	
16	Yeldari	1) Rain Gauge on Dam (ordinary)	1	1	0	
		2) Rain Gauge on dam( self-recording)	1	0	1	
17	Mehekari	1) Rain Gauge on Dam (self-recorder)	1	1	0	

1	2	3	4	5	6	7
18	Matkuli	1) Rain Gauge on Dam (ordinary)	1	0	1	
19	Mahasangvi	1) Rain Gauge on Dam (ordinary)	1	0	1	
20	Majalgaon	1) Rain Gauge on Dam (ordinary)	1	1	0	
		2) Rain Gauge on dam( self-recording)	1	1	0	
		3) Raingauge in Catchment (ordinary)	13	12	1	
		4) Rain gauge in catchment (Self recorder)	6	6	0	
		5) Pan evaporimeter	1	1	0	
		6) Other meteorological instruments	1	0	1	
21	Kambli	1) Rain Gauge on Dam (self-recorder)	1	0	1	
22	Manjra	1) Rain Gauge on Dam (ordinary)	1	1	0	
		3) Rain Gauge in Catchments(ordinary)	1	1	0	
		5) Pan evaporimeter	1	1	0	
23	Lower Manar	1) Rain Gauge on Dam (ordinary)	1	1	0	
		2) Pan evaporimeter	1	1	0	
		3) Rain gauge on Dam (Self recorder)	1	0	1	
		4) water stage recorder	2	1	1	
24	Upper Manar	1) Rain gauge on Dam (ordinary)	1	1	0	
25	Masalga	1) Rain Gauge on Dam (ordinary)	1	1	0	
26	Jakapur	1) Pan Evaporimeter	1	1	0	
27	Kurnoor	1) Pan Evaporimeter	1	1	0	
28	Terna	1) Rain Gauge on Dam (ordinary)	1	1	0	
29	Chandani	1) Rain Gauge on Dam (ordinary)	1	1	0	
30	Isapur	1) Rain Gauge on Dam (ordinary)	1	1	0	
		2) Rain Gauge on Dam (Self recorder)	1	0	1	
		3) Rain Gauge in catchment(ordinary)	8	8	0	
		5) Pan Evaporimeter	1	1	0	
		6) Wind velocity recorder	1	0	1	
		7) Wind direction recorder	1	0	1	
		8) Wet & Dry Bulb Thermometer	1	0	1	
		9) Barometer	1	0	1	
31	Lower Terna	1) Rain Gauge in catchment(self-recorder)	4	0	4	
		2) Rain Gauge on Dam (self-recorder)	1	0	1	
		3) Rain Gauge in catchment(ordinary)	7	0	7	
		4) Pan Evaporimeter	1	0	1	
		5) Wind direction recorder	1	0	1	
		6) Wet/ Dry bulb Thermometer	1	0	1	
		7) Raingauge on Dam (ordinary)	1	0	1	
32	Khandala	1) Rain Gauge on Dam (ordinary)	1	1	0	
33	Kesarjalga	1) Rain Gauge on Dam (ordinary)	1	1	0	
34	Turori	1) Rain Gauge on Dam (ordinary)	1	1	0	
35	Nandgaon	1) Rain Gauge on Dam (ordinary)	1	1	0	

1	2	3	4	5	6	7
36	Harani	1) Rain Gauge on Dam (ordinary)	1	1	0	
37	Rui	1) Rain Gauge on Dam (ordinary)	1	1	0	
38	Sakat	1) Rain Gauge on Dam (ordinary)	1	1	0	
39	Benitura	1) Rain Gauge on Dam (ordinary)	1	1	0	
40	Bedkinala	1) Rain Gauge in catchment (ordinary)	1	1	0	
41	Diggi	1) Rain Gauge on Dam (ordinary)	1	1	0	
42	Achler	1) Rain Gauge on Dam (ordinary)	1	1	0	
43	Kunsawali	1) Rain Gauge on Dam (ordinary)	1	1	0	
44	Banganga Di	1) Rain Gauge on Dam (ordinary)	1	1	0	
45	Sangmeshwar	1) Rain Gauge on Dam (ordinary)	1	1	0	
46	Sindgaon	1) Rain Gauge on Dam (ordinary)	1	1	0	
47	Babhali	1) Rain Gauge on Dam (ordinary)	1	0	1	
<b>Total</b>			<b>132</b>	<b>87</b>	<b>45</b>	

**Table No. 4.2****Mortality status of Meteorological Instruments Installed on Dams**

Sr. No.	Type of Instruments	Number Of Instruments			
		Total	Working	Non-Working	Mortality (%)
1	2	3	4	5	6
1	Rain gauge on dam (Ordinary)	43	34	9	20.93
2	Rain gauge on dam (Self Recorder)	10	3	7	70.00
3	Rain gauge in catchment (Ordinary)	35	27	8	22.86
4	Rain gauge in catchment (Self Recorder)	14	9	5	35.71
5	Pan Evaporimeter	12	9	3	25.00.
6	Wind velocity recorder	2	1	1	50.00
7	Wind direction recorder	3	1	2	66.67
8	Wet/dry bulb thermometer	2	0	2	100
9	Thermometer for air jump	0	0	0	0
10	Thermometer for reservoir water temp	0	0	0	0
11	Water stage recorder	5	2	3	60.00
12	Barometer	1	0	1	100
13	Sun shine recorder	0	0	0	0
14	Max & Min thermometer	0	0	0	0
15	Wave height recorder	0	0	0	0
16	Hydrometer	0	0	0	0
17	Humidity Meter	0	0	0	0
18	Automatic level controller	0	0	0	0
19	Steven meter	0	0	0	0
20	DWLL	0	0	0	0
21	Other Meteorological Instruments	7	3	4	57.14
<b>Total</b>		<b>132</b>	<b>87</b>	<b>45</b>	<b>34.09</b>

**Consolidated Health Status Report  
of Identified Large Dams In  
Marathwada Region 2019 – 20**

**PART – 5**

**Status of NCDS Documents submitted to DSO of Class-I Dams  
(Including Private Dams)**

**(As on 30-03-2020)**



## **National Committee on Dam Safety (NCDS) Documents**

### **PART-V - Importance of National Committee on Dam Safety (NCDS) Documents :**

Central Water Commission (CWC) has laid down various guidelines covering the standardized dam safety practices-essentially guiding the dam owners in preparation of Emergency Action Plans, Periodical Dam Safety inspections, comprehensive dam Safety evaluation and appropriate institutional framework for dam safety. Their implementation is emphasized during the meetings of National Committee on Dam Safety (NCDS) and through the communications sent in this regard.

During the 34<sup>th</sup> meeting held at Chennai in March 2015 it was requested to all the Dam owners to take necessary steps for preparation of EAPs & other documents & report to NCDS Secretariat about the number of Dams for which EAPs & other documents have been prepared, along with the target dates for the preparation of EAPs & other documents for the remaining Dams.

The documents to be prepared as per National Committee on Dam Safety are as under & these shall be properly maintained and kept up to date by including latest information available.

1. EAP
2. R.O.S & G.O.S.
3. Data Book
4. O & M manual
5. Record Drawing & Completion Report,

### **1. EAP : Emergency Action Plan:**

An Emergency action plan is a formal plan that identifies potential emergency conditions at a dam prescribes the procedures to be followed to minimize property damage and loss of life. The EAP contains procedures and information to assist the dam owner in taking necessary actions in time to moderate or alleviate the problems, in addition to issuing early warning & notification messages to responsible emergency management authorities, viz., District Magistrate/Collector, Armed Forces, Paramilitary forces, Project Authorities & other Central/State Agencies. It also contains inundation maps to show the emergency management authorities of the critical areas for necessary relief and rescue actions in case of an emergency. In a nutshell, it outlines “who does, what, where, when and how” in an emergency situation or unusual occurrence affecting the Dams.

The Emergency Action Plan has to be prepared as per Guidelines circulated by C.W.C., New Delhi's vide letter no. 3/19/NCDS/Guidelines EAP/DSM/2004/233-67, Dtd. 17 May 2006. CWC Guidelines are available on [http://www.cwc.gov.in/main/downloads/cwc/EAP\\_chapters.pdf](http://www.cwc.gov.in/main/downloads/cwc/EAP_chapters.pdf)

## **2. R.O.S. (Reservoir operation schedule) & G.O.S. (Gate operation schedule) :**

It is very necessary to lay down operating procedures of all storage reservoirs with the objective to limit the flood stages in the river downstream and with maximum feasible utilization of the flood capacity of the river channel downstream of reservoirs, consistent with the safety of the dam. A proper reservoir operation schedule should be in place.

For this purpose a schedule of opening and closing the gates to limit the reservoir levels to preset gauges should be laid down. Schedule for the dam as per operation & maintenance manual should be strictly adhered. The entire capacity of reservoir is used for active conservation. When the reservoir rises above active conservation, operation will be in accordance with the standing operation procedures. Inflow forecasting arrangement should be made for easy operation of gates. The Engineer in charge should inform immediately to the flood maintenance engineer downstream and flood –fighting center of the releases from the reservoir.

## **3. Data book:**

Proper assessment of dam safety involves a thorough review of design, construction and performance records prior to conducting a field examination. The Data Book is an unpublished document which is prepared before the initial safety inspection of each dam. This book is abbreviated, convenient source of information, summarizing all pertinent records and history related to the safety of a dam and is a reference for the evaluation team. This Data Book should answer most questions about the dam. A list of reference is included if additional information is needed. Continual updating of the Data Book will be required as future inspections are made, new problems arise, new investigations are undertaken and remedial treatments performed. Documentation of all projects may be done in the Data Book format which is the primary data base for the team evaluating the safety of a dam. (Guidelines on standardized Data Book format are available at [http://www.cwc.gov.in/Dam\\_safety.html](http://www.cwc.gov.in/Dam_safety.html))

## **4. O & M Manual:**

It is desirable that a separate manual is available with the officers. The officers Incharge of such works are requested to personally go through the manual and maintain the records from time to time in such a manner as to give their successors complete and correct idea of the state of each of the several storage works in their charge and the different standing orders on all matters concerning the works. This will enable them to tackle problems as they

arise, by quickly referring to the manual as far as possible without having to depend on the office to give information. The complete set of manual for each of the storage works should be personally handed over to successor by each concerned officer.

Copies of the maintenance manual shall be maintained at all offices right from sectional office to Circle office.

It is also necessary that the manuals are inspected at the time of inspection by the superior officers. Record of handing over and inspection should be maintained.

#### **5. Record Drawing & Completion Report :**

The importance of record drawings & completion report as an archival data need not be emphasized. All efforts should be made by field engineers to prepare Record Drawing & Completion Report and store them for future reference.

Table - 5.1

COMPARATIVE STATEMENT OF EAP, GOS AND ROS OF CLASS I DAMS IN MARATHWADA REGION														
S. No.	Name of CE Office	EAP				GOS				ROS				Remark
		Total Class I Dams		EAP Received		Total Gated Class I Dams		GOS Received		Total Gated Class I Dams		ROS Received		
		HSR-2016	HSR-2019	HSR-2016	HSR-2019	HSR-2016	HSR-2019	HSR-2016	HSR-2019	HSR-2016	HSR-2019	HSR-2016	HSR-2019	
1	CE (WR), Aurangabad	20	14	4	4	20	14	3	4	20	14	5	6	
2	CE (CADA), Aurangabad	12	23	4	5	12	23	7	7	12	23	7	7	
	TOTAL GOVT.DAMS	32	37	8	9	32	37	10	11	32	37	12	13	
4	PRIVATE	0	0	0	0	0	0	0	0	0	0	0	0	
	TOTAL (GOVT.+ PRIVATE) DAMS	32	37	8	9	32	37	10	11	32	37	12	13	

**Table - 5.2**

<b>Position of preparation of Emergency Action Plan (EAP)</b>					
Class I Dams = 37					
<b>Sr. No</b>	<b>Name of C.E.</b>	<b>Total Dam</b>	<b>Received</b>	<b>Not Received</b>	<b>Remarks</b>
1	C.E, W.R, Aurangabad	14	4	10	
2	C.E, CADA, Aurangabad	23	5	18	
	<b>Total</b>	<b>37</b>	<b>9</b>	<b>28</b>	

**Table - 5.3**

<b>Position of preparation of Reservoir Operation Schedule (ROS)</b>					
Gated Dams = 37					
<b>Sr. No</b>	<b>Name of C.E.</b>	<b>Total Dam</b>	<b>Received</b>	<b>Not Received</b>	<b>Remarks</b>
1	C.E, W.R, Aurangabad	14	6	8	Automatic Gate (1)
2	C.E. CADA, Aurangabad	23	7	16	
	<b>Total</b>	<b>37</b>	<b>13</b>	<b>24</b>	

**Table - 5.4**

<b>Position of preparation of Gate Operation Schedule (GOS)</b>					
Gated Dams = 37					
<b>Sr. No</b>	<b>Name of C.E.</b>	<b>Total Dam</b>	<b>Received</b>	<b>Not Received</b>	<b>Remarks</b>
1	C.E, W.R, Aurangabad	14	4	10	Automatic Gate (1)
2	C.E. CADA, Aurangabad	23	7	16	
	<b>Total</b>	<b>37</b>	<b>11</b>	<b>26</b>	

**Table - 5.5**

<b>Damwise Position of EAP, ROS, GOS Documents</b>				
<b>Class - I Dams</b>				
R = Received, NR = Not Received, AG = Automatic Gate				
<b>Sr.No</b>	<b>Name of Dam</b>	<b>EAP</b>	<b>ROS</b>	<b>GOS</b>
1	2	3	4	5
<b>GMIDC</b>				
<b>I) C.E, W.R, Aurangabad</b>				
<b>A) S.E, A.I.C, Aurangabad</b>				
1	Shivana Takli	R(2019)	R(2014)	NR
<b>B) S.E, N.I.C, Nanded</b>				
2	Isapur	R(2008)	R(2014)	R(1999)
3	Upper Manar	NR	R(2014)	NR
4	Lower Manar	NR	A G	A G
5	Yeldari	R(2019)	R(2014)	R(1989)
6	Siddheshwar	R(1994)	R(2014)	R(1989)
7	Vishnupuri Barrage	NR	NR	NR
8	Digras Barrage	NR	NR	NR
9	Babhali Barrage	NR	NR	NR
10	Balegaon HL Barrage	NR	NR	NR
11	Amdura HL Barage	NR	NR	NR
12	Mudgal HL Barrage	NR	NR	NR
13	Dhalegaon HL Barrage	NR	NR	NR
14	Upper Kundlika	NR	NR	NR
	<b>Received</b>	4	5	3
	<b>Not Received</b>	10	8	10
	<b>Automatic Gate</b>	0	1	1
	<b>Total</b>	14	14	14

Sr.No	Name of Dam	EAP	ROS	GOS
1	2	3	4	5
<b>II) C.E, CADA, Aurangabad</b>				
<b>A) S.E &amp; Admn, CADA, Aurangabad</b>				
1	Paithan (Jayakwadi)	R(2019)	R(2010)	R(1999)
2	Bordahegaon	NR	R(2009)	R(2009)
3	Narangi	NR	R(2009)	R(2009)
4	Lower Dudhna	NR	NR	NR
5	Mangrul H.L. Barrage	NR	NR	NR
6	Loni Savangi H.L. Barrage	NR	NR	NR
7	Raja Takli H.L. Barrage	NR	NR	NR
8	Jogaldevi H.L. Barrage	NR	NR	NR
9	Apegaon H.L. Barrage	NR	NR	NR
<b>B) S.E.&amp; Admm, CADA, Beed</b>				
10	Lower Terna	R(2020)	R(2018)	R(1999)
11	Manjra	R(2020)	R(2018)	R(1990)
12	Majalgaon	R(2020)	R(2007)	R(2006)
13	Masalaga	R(2020)	R(2018)	R(2008)
14	Khulgapur	NR	NR	NR
15	Bindgihal	NR	NR	NR
16	Karsa Poharegaon Barrage	NR	NR	NR
17	Rajegaon K.T.Weir	NR	NR	NR
18	Takalgaon Deola Barrage	NR	NR	NR
19	Dhanegaon High Level Barrage	NR	NR	NR
20	Sai Barrage	NR	NR	NR
21	Shivni H.L.Barrage	NR	NR	NR
22	Hosur Barrage	NR	NR	NR
23	Gunjarga K.T.Weir	NR	NR	NR
	Received	5	7	7
	Not Received	18	16	16
	Total	23	23	23

**Table - 5.6**

<b>Position of preparation of other NCDS Documents</b> <b>Marathwada Region</b> <b>Total Class – I Dams = 37</b>										
Sr. No.	Name of C.E.	Total Dams	Completion Report		Record Drawing		Data Book		O & M Manual	
			Received	Not received	Received	Not received	Received	Not received	Received	Not Received
1	C.E, W.R, Aurangabad	14	1	13	3	11	1	13	3	11
2	C.E. CADA, Aurangabad	23	2	21	3	20	1	22	3	20
	<b>Total</b>	<b>37</b>	<b>3</b>	<b>34</b>	<b>6</b>	<b>31</b>	<b>2</b>	<b>35</b>	<b>6</b>	<b>31</b>



**Table - 5.7**

**Position of other NCDS Documents  
( Class - I Dams)**

<b>Sr. No</b>	<b>Name Of Dam</b>	<b>Completion Report</b>	<b>Record Drawing</b>	<b>Data Book</b>	<b>O &amp; M manual</b>	<b>Remark</b>
<b>GMIDC</b>						
<b>I) C.E, W.R, Aurangabad</b>						
<b>A) S.E, A.I.C, Aurangabad</b>						
1	Shivana Takli	NR	NR	NR	NR	
<b>B) S.E, NIC, Nanded</b>						
2	Isapur	R	R	R	R	
3	Upper Manar	NR	NR	NR	NR	
4	Lower Manar	NR	NR	NR	NR	
5	Yeldari	NR	R	NR	R	
6	Siddheshwar	NR	R	NR	R	
7	Vishnupuri Barrage	NR	NR	NR	NR	
8	Digras Barrage	NR	NR	NR	NR	
9	Babhali Barrage	NR	NR	NR	NR	
10	Balegaon HL Barrage	NR	NR	NR	NR	
11	Amdura HL Barage	NR	NR	NR	NR	
12	Mudgal HL Barrage	NR	NR	NR	NR	
13	Dhalegaon HL Barrage	NR	NR	NR	NR	
14	Upper Kundlika	NR	NR	NR	NR	
	Received	1	3	1	3	
	Not Received	13	11	13	11	
	<b>Total</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	

Sr. No	Name Of Dam	Completion Report	Record Drawing	Data Book	O & M manual	Remark
<b>II) C.E. CADA, Aurangabad</b>						
<b>A) S.E &amp; Admn, CADA, Aurangabad</b>						
1	Paithan (Jayakwadi)	NR	R	R	R	
2	Bordahegaon	NR	NR	NR	NR	
3	Narangi	NR	NR	NR	NR	
4	Lower Dudhna	NR	NR	NR	NR	
5	Mangrul H.L. Barrage	NR	NR	NR	R	
6	Loni Savangi H.L. Barrage	NR	NR	NR	R	
7	Raja Takli H.L. Barrage	NR	NR	NR	NR	
8	Jogaldevi H.L. Barrage	NR	NR	NR	NR	
9	Apegaon H.L. Barrage	NR	NR	NR	NR	
<b>B) S.E.&amp; Admm, CADA, Beed</b>						
10	Lower Terna	R	R	NR	NR	
11	Manjra	R	R	NR	NR	
12	Majalgaon	NR	NR	NR	NR	
13	Masalaga	NR	NR	NR	NR	
14	Khulgapur	NR	NR	NR	NR	
15	Bindgihal	NR	NR	NR	NR	
16	Karsa Poharegaon Barrage	NR	NR	NR	NR	
17	Rajegaon K.T.Weir	NR	NR	NR	NR	
18	Takalgaon Deola Barrage	NR	NR	NR	NR	
19	Dhanegaon High Level Barrage	NR	NR	NR	NR	
20	Sai Barrage	NR	NR	NR	NR	
21	Shivni H.L.Barrage	NR	NR	NR	NR	
22	Hosur Barrage	NR	NR	NR	NR	
23	Gunjarga K.T.Weir	NR	NR	NR	NR	
	Received	2	3	1	3	
	Not Received	21	20	22	20	
	<b>Total</b>	<b>23</b>	<b>23</b>	<b>23</b>	<b>23</b>	

**Annual Consolidated Health Status Report  
Of Identified Large Dams In  
Marathwada Region**

**PART – 6**

**Data filling status on DHARMA portal  
Marathwada Region**

## **PART-VI - DHARMA: Dam Health and Rehabilitation monitoring application**

### **Introduction-**

Dam health & Rehabilitation Monitoring application (DHARMA) is a web based asset management software to support the effective collection and management of authentic asset and health data for all large dams in India and address key dam safety challenges of .

- i) Insuring Completeness of information.
- ii) Bring stake holders together
- iii) Effectively managing asset inventory.
- iv) Assess soundness of dam health.

### **Design and Development-**

DHARMA software will consist of seven modules.

- i) Project features
- ii) Project portfolio
- iii) Engineering features.
- iv) Asset health.
- v) Asset rehabilitation.
- vi) Stake holders and
- vii) Document library.

The first three modules (i to iii) consist of mostly static data, to be entered once and rarely undergo a change whereas modules iv) and v) will be dynamic and require regular updating with information associated with inspections, investigations, instrumentation and rehabilitation works. Modules vi) and vii) contain information useful for reference.

**Table 6.1**  
**Data filling status on DHARMA portal**

Sr. No	Name of Dam	NRLD registration number	Dharma data filling status (%)
1	2	3	4
<b>[1] Chief Engineer (CADA), Aurangabad</b>			
<b>(1) CADA, Aurangabad</b>			
<b>(a) JID, Nathnagar (North), Paithan</b>			
1	Paithan (Jayakwadi)	MH09HH0597	48
2	Mangrul H.L.Barrage	MH09MH2127	11
3	Rajatakli H.L.Barrage	MH09MH2128	11
4	Jogladevi H.L.Barrage	MH09MH2125	11
5	Loni savangi H.L. Barrage	MH09MH2126	11
6	Apegaon H.L. Barrage	MH09MH2123	11
<b>(b) NMID, Vaijapur</b>			
7	Bor dahegaon	MH09MH1491	25
8	Narangi	MH09MH1490	31
<b>(C) JID, Jalna</b>			
9	Lower Dudhna	MH09MH2089	11
<b>(2) CADA, Beed</b>			
<b>(a) MID, Parali (V)</b>			
10	Majalgaon	MH09HH1174	10
<b>(b) LID-1, Latur</b>			
11	Lower Terna	MH09MH1228	11
12	Manjra	MH09MH1585	09
13	Masalga	MH09LH1408	11
14	Khulgapur H.L. Barrage	MH09MH2181	11
15	Bindgihal Latur Type Barrage	MH09MH2183	09
16	Sai H.L. Barrage	MH09LH2131	11
17	Takalgaon Devla Latur type Barrage	MH09MH2135	11
18	Shivni H.L. Barrage	MH09MH2132	09
19	Hosur Barrage	MH09MH2420	11
20	Gunjarga K.T. Weir	MH09MH2421	10
21	Rajegaon K. T. Weir	MH09MH2248	11
22	Dhanegaon H.L. Barrage	MH09MH2129	10
23	Karsa Pohregaon Barrage	MH09MH2246	11

1	2	3	4
<b>[2] Chief Engineer (WR), Aurangabad</b>			
<b>(1) Aurangabad Irrigation Circle, Aurangabad</b>			
<b>(a) MID-1, Aurangabad</b>			
24	Shivna takli	MH09MH1651	66
<b>(2) Nanded Irrigation Circle, Nanded</b>			
<b>(a) NID, South, Nanded</b>			
25	Lower Manar	MH09MH0170	11
26	Balegaon HL Barrage	MH09MH2117	09
<b>(b) NID, North, Nanded</b>			
27	Upper manar	MH09HH1806	11
28	Vishnupuri	MH09LH1254	11
29	Digras H.L. Barrage	MH09HH2116	10
30	Babhali H.L. Barrage	MH09MH2118	11
31	Amdura H.L. Barrage	MH09HH2119	09
<b>(c) UPPD-1, Nanded</b>			
32	Isapur (UPP)	MH09HH0947	34
<b>(d) PID, Basmatnagar</b>			
33	Yeldari	MH09HH0171	37
34	Siddheshwar	MH09HH0172	46
<b>(e) MID, Parbhani</b>			
35	Mudgal HL Barrage	MH09MH2121	11
36	Dhanegaon HL Barrage	MH09MH2129	10
<b>(3) BIPC, Paral (V)</b>			
<b>(b) BID, Beed</b>			
37	Upper Kundalika	Proposed to be included in NRLD	--



# DHARMA

Integrated Approach for Asset Management of Dams in India

Information Bulletin No.4

January 2019



INSIDE

p.1 What is DHARMA?

p.2 The users of DHARMA

p.3 DHARMA Modules

p.4 Implementation

## The Dam Health and Rehabilitation Monitoring Application (DHARMA)

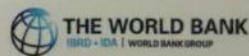
is being developed as a part of the institutional strengthening component of the Dam Rehabilitation and Improvement Project (DRIP). DRIP is an initiative undertaken by the Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India with the financial assistance of The World Bank.

**D**HARMA has been designed and developed to enhance the capacity of individuals and organisations throughout India to manage their dam assets scientifically and professionally so as to sustain advantages of dams. This Information Bulletin No.4 has been prepared by the Central Project Management Unit (CPMU) to present an overview of the purpose and content of the software.

Project



Financial Assistance



Technical Assistance



Scanned with CamScanner



# What is DHARMA?

## Introduction

There are 5264 large dams in operation in India and 437 are under construction. In addition, there are several thousand smaller dams. All these dams are vital for ensuring the water security of the country in a sustainable manner and regulating water during the rainy season to prevent floods.

Today, many of these dams are facing various structural deficiencies as well as shortcomings in the operation and monitoring facilities. There are also inefficiencies in the monitoring of real-time information regarding dam health and ongoing rehabilitation measures. These conditions affect the safety of the structures and pose risks to life and properties of people downstream of dam.

In April 2012, the six-year **Dam Rehabilitation and Improvement Project (DRIP)** was launched at an estimated cost of 2100 Crore INR for assisting dam-owning agencies in rehabilitating selected dams across selected states.

In 2017, the project has been extended by two years, until June 2020, to finish all of the programmed rehabilitation works on 223 dams in 7 states, with a revised cost of 3466 Crore INR.

In this context, the **Dam Health and Rehabilitation Monitoring Application (DHARMA)** has been designed and developed to enhance the capacity of individuals and organisations throughout India to manage their dam assets scientifically and professionally so as to sustain advantages of dams (irrigation and water supply, flood control, hydropower etc.) and prevent disasters.



Figure 1: DHARMA capturing information

## Why is it needed ?

Managing the Dam Safety of over five thousand dams entails a number of obstacles to overcome. The prime challenge is to deliver the precious dam health information collected during the site inspection to the State and Central **Dam Safety Organisations (DSOs)** in a timely and secure manner. Improving this transmission of information thanks to data analysis will generate a more precise monitoring of the dams' health in DSOs as well as a more informed prioritization of rehabilitation works. To accomplish this goal, the four main challenges listed below must be overcome; it is DHARMA's goal to address these challenges.



Figure 2: The purposes of DHARMA

### 1. Bring Stakeholders Together

DHARMA will ensure that details of all stakeholders are recorded and maintained. Such details may pertain to individuals as well as organisational entities associated with dam planning and design, construction, operation and maintenance, and rehabilitation.

### 2. Ensure Completeness of Information

DHARMA will enable gathering and updating of dam asset information in a centralised and structured manner so as to overcome limitations of multiplicity of agencies, wide geographical spread, voluminous data, varied terminologies and units, unknown and mismatched time reference and inconsistent formats.

### 3. Assess Soundness of Dam Health

DHARMA will ensure prompt capturing of inspection and investigation data directly by the 'Dam Health Engineers' and provide tools for correct analysis and interpretation of this time dependent data.

### 4. Effectively manage Asset Inventory

DHARMA will provide a complete data collection and management platform for assimilation of varied information for every dam component across all dam projects, also thereby benefiting from the insights and learning curves of a wider stakeholder spectrum.



# The Users of DHARMA

## DHARMA User Types

DHARMA has been designed for individuals and organisations at **Dam, State and Central level**. Owing to the large number of dams, several thousand individuals are expected to use the software; they will be assigned to seven main user roles across three tiers, as presented below:

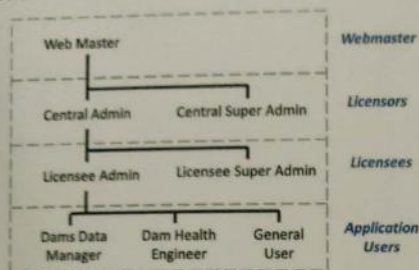


Figure 3: DHARMA User Types

The highest tier '**Licensors**' includes the 'Central Admin' and 'Central Super Admin' roles — these are based in the Central Dam Safety Organisation (in Central Water Commission) and are responsible for administrative control and distribution of the DHARMA software. One of the responsibilities of the 'Licensors' is to grant licenses to the second '**Licensees**' tier which



includes the 'Licensee Admin' and 'Licensee Super Admin' roles. These are typically members of Central or State dam owning organisations (eg. State Water Resources Departments). Licensees, in turn, can add three types of '**Application Users**' namely 'Dams Data Manager', 'Dam Health Engineer' and 'General User' who are responsible for managing and updating the data in DHARMA.



A clear distinction is made between the '**Dams Data Manager**' (DDM) and '**Dam Health Engineer**' (DHE). The **Dams Data Manager's** role is to manage the static information of dams, i.e. information that is entered once into the software and rarely changes (such as Spillway Capacity, Location of Dam, Access...). He/she is authorized to manage the data of the first three modules, presented in the next page. The **Dam Health Engineer's** role is to manage dynamic data of a Dam, i.e. data that requires regular updates such as inspection report, investigations, instrumentation data...

DHEs are able to enter their inspection report directly on the software. A mobile application will also be developed for them to enter and upload their inspection report directly from dam site. An option to upload geo-referenced data and photos of each deficiency will be included so as to report deficiencies as precisely as possible.

DHEs are able to enter their inspection report directly on the software. A mobile application will also be developed for them to enter and upload their inspection report directly from dam site. An option to upload geo-referenced data and photos of each deficiency will be included so as to report deficiencies as precisely as possible.



	Dams Data Manager (DDM)	Dam Health Engineer (DHE)
Type of Data handled	Static Data	Dynamic Data
Modules	Modules 1 to 3: Project Features, Project Portfolio, Engineering Features	Modules 4 to 7: Asset Health, Asset Rehabilitation, Stakeholders, Document Library
Tasks assigned	<ul style="list-style-type: none"> <li>Entering <b>high level information</b> of the dam (Height, location, access, ...)</li> <li>Creating the <b>Portfolio</b> of the Dam by assembling the different DHARMA <b>components</b> to match the physical layout of the dam</li> <li><b>Geo-referencing</b> of each component on Google Maps and adding <b>photos</b></li> <li>Entering the <b>technical details</b> of each <b>component</b> ( Dam Block, Spillway, Gallery...)</li> </ul>	<ul style="list-style-type: none"> <li>Entering the regular <b>pre and post monsoon inspection reports</b></li> <li>Entering and updating the <b>OSM, Investigations, Instrumentation, and EAP</b> data of the dam</li> <li>Entering the details of <b>rehabilitation works</b> implemented at the dam</li> <li>Entering the <b>contact</b> details of the dam's staff and suppliers in the <b>Stakeholders</b> Module</li> <li>Uploading all important <b>dam documents</b> in pdf format into the Document Library Module</li> </ul>

Figure 4: Distinction between DDM and DHE

# DHARMA Modules

DHARMA consists of the **7** modules and **2** additional data analysis tools presented below:

## Static Modules

### 1. Project Features

This module gives the static, high-level details of a dam project, such as the Dam's Height, Location, Access details... The General, Location and Financial information will be stored for all projects as well as the details of specific benefits provided by each dam: Irrigation, Hydropower, Navigation, Water Supply, Industrial, Tourism, Flood Control, Fishing, and Other Benefits.

### 2. Project Portfolio

It allows the Dams Data Manager to describe the make-up of his/her dam project using seventeen building blocks, the DHARMA components (Figure 6). Each component is added and organized in layers, similar to the MS Windows Explorer menu. For each component, the user can locate its exact position on Google Maps, upload pictures and schematics.

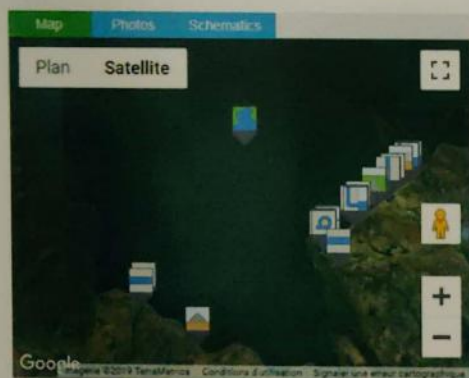


Figure 5: DHARMA Project Portfolio Map

### 3. Engineering Features

This module contains the technical details associated with each of the components entered in the Project Portfolio module. For example, whereas the name, location, photos and schematics of a storage reservoir would be entered in the Project Portfolio module, it is in Engineering Features that the volumes, elevations and dimensions are provided.

## Dynamic Modules

### 4. Asset Health

This module supports the creation of regular pre and post-monsoon inspections and specific inspections. In this module, the Dam Health Engineers can also upload Instrumentation, Operation & Maintenance (O&M) and Emergency Action Plan (EAP) data, which is attached to the components from the Project Portfolio.

### 5. Asset Rehabilitation

Also to be administered by designated Dam Health Engineers, it captures the details of any rehabilitation works (minor or major) at the dam project. The need for future rehabilitation works should be identified in the inspection forms of the asset health module however, previous or historic rehabilitation works (pre-DHARMA) can also be entered into the module independently.

### 6. Stakeholders

The purpose of this module is to capture details of all individuals and organizations involved with each dam project including dam owners, operators, designers, consultants, contractors, and suppliers. Simple forms are provided explaining the nature and duration of involvement of each party and their contact details.

### 7. Document Library

The last module enables users to upload important designs and documents into a user-friendly database from where they can be easily retrieved using filters and other search criteria. An additional functionality will allow users to tag the documents such that they can be retrieved from other relevant sections of the software using hyperlinks.

## Data Analysis Tools

The **Dashboard** enables Dam Safety Organisations to monitor the data-entry for each dam and to pinpoint dams with critical deficiencies.



Figure 6: DHARMA Static Dashboard

The **Report Generator** creates lists of dams responding to selected criteria. (State, Purpose, Completion Year...)



# Implementation of DHARMA

The success of DHARMA particularly depends on its uptake by Dam Data Managers and Dam Health Engineers around the country (cf. page 2, the users of DHARMA) as they will be in charge of entering all the data. The implementation of the DHARMA application is therefore as important as its design and development.

The first two modules were launched in May 2016 then, the team of designers, which gathers both software developing and civil engineering skills, started to perform training sessions around India in order to make the users familiar with the application.

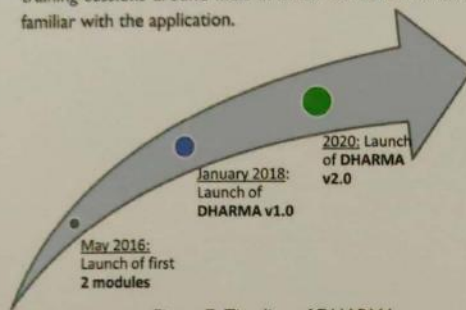


Figure 7: Timeline of DHARMA

**DHARMA v1.0** was launched nationally in January 2018, during the previous International Dam Safety Conference in Trivandrum and following the successful migration of the National Register of Large Dams (NRLD) in 2017. Since then 24 trainings were held for 865 participants including 4 trainings in non-DRIP States (Rajasthan, Maharashtra & Gujarat). Thanks to these trainings sessions, today 600 people use DHARMA actively and 1546 dams are assigned (out of 5236 large dams in India).

The trainings take place in the State Capitals, they are arranged by the Implementing Agencies which are part of the Dam Rehabilitation and Improvement Project (DRIP). Participants of the trainings (ranging from 30 to 90 for

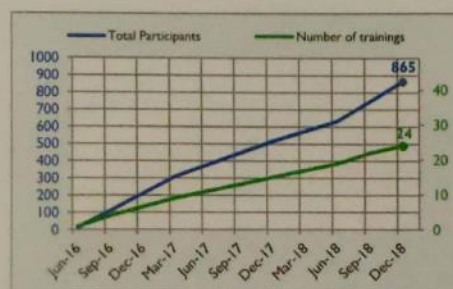


Figure 8: Cumulative number of DHARMA users

each session) receive hands-on sessions for each module and tool, interactive quizzes and presentations on the purpose and benefits of DHARMA.

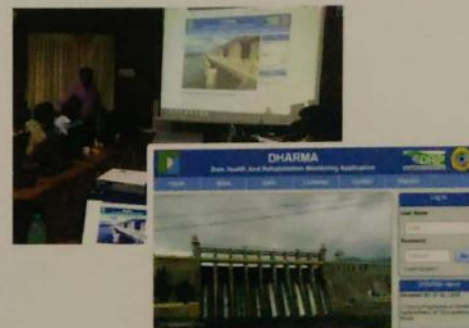
The **version 2.0** of DHARMA is to be implemented by December 2020. This version is currently under design and is likely to consist of 4 additional "sub-modules" and 3 additional tools.



Figure 9: Status of data entry Agency-wise

Here is a list of all Implementing Agencies already using DHARMA:

Implementing Agencies		Dams assigned to agency	Dams with entered data	Total Users
Agencies in DRIP	Odisha Water Resources Department	204	182	204
	Karnataka Water Resources Department	231	184	122
	Tamil Nadu Water Resources Department	94	94	91
	Madhya Pradesh Water Resources Dept.	987	42	85
	Kerala Water Resources Department	20	20	83
	Uttarakhand Jal Vidyut Nigam Limited	6	4	33
	Kerala State Electricity Board	36	26	25
	Tamil Nadu Elec. Gen & Distrib Corp	38	38	15
	Damodar Valley Corporation	4	4	8
	Rajasthan Water Resources Department	211	131	90
Agencies not in DRIP	Maharashtra Water Resources Department	2354	80	49
	Gujarat Engineering Research Institute	631	21	31
	Punjab Water Resources Department	15	14	18
	Bhakra Beas Management Board	4	4	7
	Uttar Pradesh Irrigation and WRD	133	1	3
	National Hydroelectric Power Corporation	22	22	3
	Bihar Water Resources Department	26	1	3
	Meghalaya Power Gen Corp Limited	7	-	2
	Narmada Hydroelec. Distr. Corporation Ltd	-	-	2
	Telangana Irrigation and CAD Department	174	-	2
<b>TOTAL</b>		<b>1544</b>	<b>548</b>	<b>861</b>





## Who can I contact to know more?

This is the fourth information bulletin on DHARMA. Development of updated versions of DHARMA and implementation of the software will continue to be taken up in a phased manner under the guidance of the **DHARMA Development Group (D3G)** and **DHARMA Implementation Group (DIG)**. All DRIP dams are expected to be incorporated into DHARMA before the completion of DRIP.

In the meantime, further information on the Dam Rehabilitation and Improvement Project (DRIP) can be found at [www.damsafety.in](http://www.damsafety.in). For further information on DHARMA, please also visit our dedicated website '[damsafety.in/dharma](http://damsafety.in/dharma),' where you can download the latest **User Manual**.

For any other queries, the DHARMA team can be contacted through the details provided below.

For further information please contact:

Project Director, DRIP and DSR Director, Central Water Commission  
3rd Floor, New Library Building, R.K. Puram, New Delhi—110066  
Telefax: +91-11-26192633  
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**Annual Consolidated Health Status Report  
Of Identified Large Dams In  
Marathwada Region**

**PART – 7**

**Status Report of Gates of Various Gated Dams in  
Marathwada Region  
(Including Private Dams)**

## **Part-7 Status report of Gates of Various gated dams in Marathwada region (including Private Dams )**

### **7.1 General**

As per GR.NO.ID/1078/23/8/IMP/2 Dtd.10/09/1980, Dam Safety Organization has been established by Government of Maharashtra for effective monitoring the safety aspects of dam.

As per Maharashtra Government Guidelines and regulation, Chief Engineer (Mechanical), Water Resources Dept. Nashik assigned Dams gate Inspection work to Superintending Engineer, Mechanical Circle, Nashik to assure proper operation and maintenance of Dam gates

Under Superintending Engineer, Mechanical Circle, Nashik Executive Engineer, Inspection unit , Aurangabad and Executive Engineer, Sluice Gate Mfg. Division, Dapodi , Pune are looking after all the inspection works.

Division offices Conduct all pre monsoon & Post Monsoon Gate Inspection work of Government, Semi Government, & Private Dams and send Reports to related authorities for same.

After Inspection work the observed points or deficiencies are classified into various categories as given below.

<b>Def. Category 1</b>	Dams with Major Deficiencies which may lead to dam failure	Very Serious Defects
<b>Def. Category 2 (2 A)&amp; (2B)</b>	Dams with rectifiable Deficiencies needs immediate attention	Serious Defects (2A)
		Require immediate attention (2B)
<b>Def. Category 3</b>	General Defects	General Defects

In the year of 2019 pre and post monsoon inspection of total 48 gated dams have been carried out by Mechanical Organisation. It is to be noted that Chief engineer (Mechanical) W.R.D Nashik, prepares independently the detail Health status Report of all the gated dams inspected by mechanical organisation. This report is published and submitted to WRD and circulated to all Concern Chief Engineers.

In this Health Status Report, only the dam wise number of deficiencies noted by mechanical organisation are given in this part of AHSR. For details regarding the actual deficiencies Health Status Report circulated by Mechanical Organisation shall be referred.

### **7.2 Overall Health Statues of Gated Dams**

32 Class-I gated dams in the Marathwada region were inspected by Mechanical Organisation Category -1 deficiency is not observed on any dam . Category -2 deficiencies are observed in 26 dams and Category-3 deficiencies are observed on all the 32 dams. Total 422 Category -2 deficiencies and 2168 Category -3 deficiencies are observed on the dams in the region.

16 Class-II gated dams in the Marathwada region were inspected by Mechanical Organisation Category -1 deficiency is not observed on any dam . Category -2 deficiencies are observed in 07 dams and Category-3 deficiencies are observed on all the 16 dams. Total 149 Category -2 deficiencies and 682 Category -3 deficiencies are observed on the dams in the region.

**Table No.7.1** shows the dam wise and category wise deficiencies identified in the region.



**Table 7.1**  
**Damwise and Categoriwise Number of Deficiencies Identified on**  
**Gated Dams in the Marathwada Region**  
**Dam Class - I**

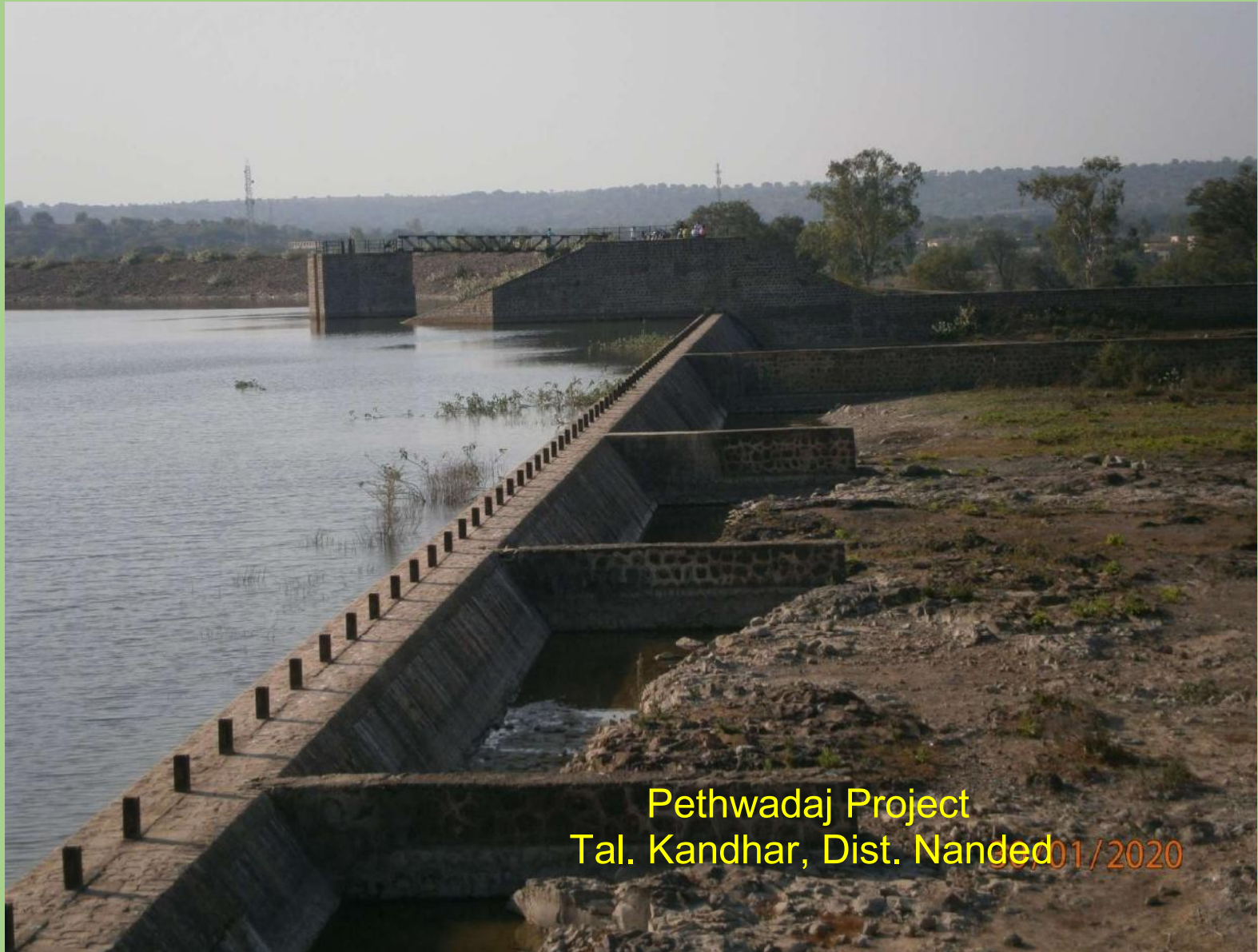
Sr. No.	Region & Name of Dam	Dam Class - I			Remarks
		Defficiencies			
		Cat-1	Cat-2 (2A)&(2B)	Cat-3	
1	2	3	4	5	6
	Chief Engineer, CADA, Aurangabad				
1	Jayakwadi	0	80	108	
2	Apegaon	0	17	48	
3	Mangrul	0	14	56	
4	Raja Takli	0	14	72	
5	Jogladevi	0	11	69	
6	Lonisawangi	0	21	112	
7	Bordahegaon	0	65	53	
8	Narangi	0	52	56	
9	Lower Dudhna	0	17	144	
10	Majalgaon	0	17	136	
11	Lower Terna	0	2	136	
12	Manjara	0	11	148	
13	Masalga	0	11	111	
14	Khulgapur Barrage	0	0	60	Newly Added For Gate inspection
15	Bindagihal Barrage	0	1	33	Newly Added For Gate inspection
16	Sai Barrage	0	1	59	Newly Added For Gate inspection
17	Takalgaon-Devla Barrage	0	2	42	Newly Added For Gate inspection
18	Shivni Barrage	0	1	51	Newly Added For Gate inspection
19	Hosur Barrage	0	1	34	Newly Added For Gate inspection
20	Gunjaraga Barrage	0	1	33	Newly Added For Gate inspection
21	Rajegaon Barrage	0	0	32	Newly Added For Gate inspection
22	Dhanegaon Barrage	0	0	57	Newly Added For Gate inspection
23	Karsa-Poharegaon Barrage	0	0	58	Newly Added For Gate inspection

1	2	3	4	5	6
	<b>Chief Engineer, (WR), Aurangabad</b>				
24	Shivna Takli	0	53	105	
25	Upper Manar	0	9	91	
26	Lower Manar	0	1	86	
27	Balegaon HL Barrage	0	0	0	Not inspected
28	Vishnupuri	0	20	107	
29	Digras Barrage	0	0	42	
30	Babhali Barrage	0	0	29	
31	Amdura HL Barrage	0	0	0	Not inspected
32	Isapur	0	0	0	Not in List of Dams Inspected by Mechanical Org
33	Yeldari	0	20	116	
34	Siddheshwar	0	9	72	
35	Mudgal HL Barrage	0	0	0	Not inspected
36	Dhalegaon HL Barrage	0	0	0	Not inspected
37	Upper Kundalika	0	1	90	Newly Added For Gate inspection
	<b>Total -</b>	<b>0</b>	<b>422</b>	<b>2168</b>	



## Dam Class - II

Sr. No.	Region & Name of Dam	Dam Class - II			Remarks
		Defficiencies			
		Cat-1	Cat-2	Cat-3	
1	2	3	4	5	6
	Chief Engineer, CADA, Aurangabad				
1	Renapur	0	4	112	Newly Added For Gate inspection
2	Terna	0	0	0	Not inspected
3	Tawarja	0	0	0	Not inspected
4	Turori	0	0	0	Not inspected
5	Chandani	0	0	0	Not inspected
6	Bhusni Barrage	0	0	34	Newly Added For Gate inspection
7	Anjana Palshi	0	29	82	
8	Purna Nevpur	0	14	49	
9	Tembhapuri	0	21	41	
	Chief Engineer, (WR), Aurangabad				
10	Kudala	0	0	48	
11	Karadkhed	0	0	69	
12	Kundrala	0	0	44	
13	Pethvadaj	0	0	30	
14	Mahalingi	0	0	31	
15	Loni	0	0	22	
16	Nagzari	0	0	32	
17	Dongargaon	0	0	24	
	Private Dams				
18	Harsul	0	9	6	Private
19	Kham	0	42	38	Private
20	Ghanewadi	0	30	20	Private
	Total -	0	149	682	



Pethwadaj Project  
Tal. Kandhar, Dist. Nanded

06/01/2020